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THE SURGICAL TREATMENT OF ARTERIAL HYPERTENSION

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Since the first bilateral supradiaphragmatic splanchnicectomy and lower dorsal sympathetic ganglionectomy was performed by one of us (M. M. P.) in November 1933, more than 1,500 patients have received this surgical treatment for essential hypertension at the University Hospital as of September 1945. Surgical treatment has long been accepted here as an integral part of the therapeutic armamentarium for hypertensive disease. Its acceptance has been tempered with the realization that its limitations are definite, that its failures are not uncommon. Rarely does surgical treatment result in a cure of hypertensive disease, but it has given remarkable benefit and prolonged the life of many hypertensive patients.

Reports of the results of surgical treatment in hypertensive disease are numerous. For the most part they are concerned with small groups followed postoperatively for a relatively short time. The largest series of cases previously reported is that of Peet, Woods and Braden,[1] with results in 350 cases followed for nine months to seven years. The most recent evaluation of a significant series is Smithwick's[2] 156 patients followed one to five years.

Those familiar with the life course of hypertensive disease readily realize that much time must be allowed to elapse before passing judgment concerning the influence of a therapeutic incident on the life history of a chronic, constitutional disease. It is with this thought in mind that we present the results in 437 cases of essential hypertension treated surgically five to twelve years ago.

CLASSIFICATION OF HYPERTENSIVE PATIENTS

Essential hypertension is a disease complex with great individual variations. In evaluating the effect of surgical treatment on this variable constitutional disease it is advisable to classify patients according to definite categories in order to determine the influence of the operation on the individual category. In this way the knowledge gained may enable intelligent selection of candidates for surgical treatment. In this way one may learn what to expect from the operation for each clinical type of essential hypertension.

A classification based merely on the height of the blood pressure level or on the width of the pulse pressure fails to take into consideration the constitutional effects of the disease. The degree of elevation of blood pressure is not a sound prognostic criterion. In their study on a large group of persons with transient hypertension, Levy, White, Stroud and Hillman[3] found no significant differences apparent between the various systolic and diastolic levels in relation to the death rates with cardiovascular-renal disease. The relative height of a temporary rise in blood pressure did not appear to foretell the severity or extent of the lesions which eventually were the cause of death.

The classification of Keith, Wagener and Barker,[4] based primarily on the severity of the hypertensive changes in the ocular fundus, is sound, but it is not entirely applicable in evaluating surgical treatment, for both the patient with far advanced heart disease and the one with no cardiac involvement whatever may have angiospastic changes in the ocular fundi; 2 such cases should not be in the same category when one evaluates the effect of the operation on a category.

We have therefore classified the 437 cases in this series according to their general clinical profile, with the constitutional course of the disease forming the primary basis for classification:

Group 1. Early, mild hypertension. These patients were entirely asymptomatic, had normal or grade 1 fundi, and showed no evidence of cardiac, cerebral or renal involvement.

Group 2. Symptoms predominate. All patients in this group complained of symptoms and had abnormal fundi but displayed no evidences of cardiac, cerebral or renal impairment.

Group 3. Organic heart disease is predominant. In each case the diagnosis of heart disease was confirmed by either or both a definitely abnormal electrocardiogram and a teleoroentgenogram showing cardiac enlargement.

Group 4. Cerebrovascular disease is predominant. Each patient in this group had one or more previous cerebral accidents.

Group 5. Impaired renal function is predominant. Each patient showed diminished concentrating ability and urea clearance values.

Group 6. Malignant hypertension. These patients had severe neuroretinitis with definite papilledema of 1 diopter or more and displayed a rapidly progressive, downhill course.

From the Departments of Surgery and Internal Medicine, University of Michigan Medical School and University Hospital.

1. Peet, M. M.; Woods, W. W., and Braden, S.: The Surgical Treatment of Hypertension: Results in 350 Consecutive Cases, J. A. M. A. **115**: 1875 (Nov. 30) 1940.

2. Smithwick, R. H.: Surgical Treatment of Hypertension: Effect of Radical (Lumbodorsal) Splanchnicectomy on the Hypertensive State of 156 Patients Followed One to Five Years, Arch. Surg. **49**: 180 (Sept.) 1944.

3. Levy, R. L.; White, P. D.; Stroud, W. D., and Hillman, C. C.: Transient Hypertension: The Relative Prognostic Importance of Various Systolic and Diastolic Levels, J. A. M. A. **128**: 1059 (Aug. 11) 1945.

4. Keith, N. M.; Wagener, H. P., and Barker, N. W.: Some Different Types of Essential Hypertension: Their Course and Prognosis, Am. J. M. Sc. **197**: 332 (March) 1939.

METHOD OF STUDY

Each patient received an extensive preoperative workup. Detailed histories were taken and physical examinations performed in the departments both of medicine and of neurosurgery. Funduscopic examination through dilated pupils was done in the ophthalmology department. A teleoroentgenogram and electrocardiogram were obtained on each patient. Kidney function studies included the determinations of urea clearance, maximum concentrating ability and blood nonprotein nitrogen and urinalysis. Excretory pyelograms were done in a majority of the series; since 1939 this has been part of the routine preoperative procedure. The aim of the preoperative examinations is to rule out all specific causes of hypertension and to determine the constitutional extent of the hypertensive state in each case. Frequent blood pressure determinations were recorded in both arms with the patient sitting, standing and recumbent, and the readings were averaged.

Follow-up data were obtained largely through subsequent, periodic visits and reexamination as described. Of the 251 patients now living from the first 437 operated on and on whom we could obtain adequate postoperative data, 146 recently returned to the University Hospital for evaluation. Information on the remaining 105 living patients was obtained from both the patient and his home physician by letter. Information concerning the deceased patients was obtained from the referring physician and near relatives.

The technic of bilateral supradiaphragmatic splanchnicectomy and lower dorsal sympathetic ganglionectomy has been described in detail.[5]

5. Peet, M. M.: The Surgical Treatment of Hypertension, California Acad. Med. 5: 58, 1935-1936.

TABLE 1.—*Sex Distribution*

	Number	Per Cent
Males	210	48
Females	227	52
Total cases	437	

TABLE 2.—*Age Distribution at Time of Operation*

Age	Number	Per Cent
10 to 19	6	1.4
20 to 29	33	7.6
30 to 39	120	27
40 to 49	208	48
50 to 59	69	15.8
63	1	0.2
Total cases	437	

TABLE 3.—*Distribution of Preoperative Blood Pressure Levels*

Pressure in Mm. Hg	Number	Per Cent
270 plus / 155 plus	52	12
240 to 269 / 140 to 154	119	27
210 to 239 / 125 to 139	151	34
180 to 209 / 110 to 124	99	23.5
160 to 179 / 95 to 109	16	3.5
Total cases	437	

PREOPERATIVE DATA

From November 1933 to December 1940, 578 hypertensive patients were operated on by various members of the neurosurgery staff. The same technic was employed in all cases and a large majority of the operations were done by the same surgeon (M. M. P.). No adequate follow-up data could be obtained for 120 of these patients, leaving a series of 437 studied.

Fifty-two per cent of the 437 patients were females (table 1).

Ninety-two per cent of the series were 30 years or more of age, with 48 per cent in the fifth decade. The youngest patient was 10 years of age and the oldest was 63 (table 2).

The blood pressure levels in these patients were very high. Twelve per cent had blood pressures of 270/155 or greater. Seventy-three per cent had blood pressures above 210/125 (table 3).

One hundred and twelve patients, or 26 per cent of the series, had malignant hypertension (table 4); this diagnosis was made only when severe neuroretinitis with 1 diopter or more of papilledema was present together with a rapid, downhill course. Thirty-five per cent of the patients, not including any with malignant hypertension, had organic heart disease, confirmed either by a teleoroentgenogram showing definite cardiac enlargement or an abnormal electrocardiogram or both. Fifty-three patients, or 12 per cent, had previous cerebral accidents. Forty-one patients, or 9 per cent, had impaired kidney function by urea clearance and maximum concentration tests. The figures for the last two groups do not include those patients who had previous cerebral accidents or impaired kidney function with malignant hypertension, for all cases of malignant hypertension are in a separate group.

TABLE 4.—*Preoperative Classification*

Group	Number	Per Cent
1. Asymptomatic and early	5	1
2. Symptomatic, with no complicating disease	72	17
3. Organic heart disease	154	35
4. Cerebrovascular disease	53	12
5. Impaired renal function	41	9
6. Malignant hypertension	112	26
Total cases	437	

It is apparent that the hypertensive state in 82 per cent of the patients in this series had already progressed to serious organic illness prior to operation.

POSTOPERATIVE RESULTS

Adequate postoperative information was obtained on 437 of the 578 consecutive patients operated on from November 1933 to December 1940. Two hundred and fifty-one patients, or 57.5 per cent, are living five to eleven years after operation. The operative mortality was 3.6 per cent (table 5).

Of the 186 patients who died subsequent to the operation, 91 had malignant hypertension (table 6). Thus 81 per cent of the preoperative group with malignant hypertension have not survived five to eleven years. Approximately one third of each of the preoperative groups with organic heart disease, cerebrovascular disease and impaired renal function are dead. All of the 5 patients with early, mild, asymptomatic hypertension are still living, and 95 per cent of the 72 patients in group 2 of our classification are alive five to eleven years after operation.

Our findings substantiate the long-known fact that hypertensive disease is of much more serious import in

the male than in the female (table 7). One hundred and seventeen males died; these constitute 62 per cent of the total deaths and 56 per cent of the total number of males in the series. Only 30 per cent of the total number of females subsequently died.

The age of the patient at the time of operation has no influence on survival. The distribution of deaths according to preoperative age is exactly comparable to the preoperative age distribution for the entire series (table 8). As has been pointed out before, it is the preoperative extent of constitutional involvement by hypertensive disease that influences length of postoperative survival.

EFFECT OF SURGICAL TREATMENT ON BLOOD PRESSURE LEVELS

The 251 patients living five to eleven years after operation have obtained and maintained significant blood pressure reductions (table 9). In 20.3 per cent blood pressure has been reduced to normal. The upper limits of normal blood pressure have been arbitrarily placed at 140/90 for ages up to 40 and at 150/95 for ages over 40. There has been definite reduction, but not to normal levels, of more than 80 mm. systolic and 25 mm. diastolic, in another 26 per cent of the living patients. Significant reduction, of more than 40 mm. systolic and 15 mm. diastolic, occurred in 35 per cent. Of the living patients 18.7 per cent showed either no significant change or increase in blood pressure.

This high percentage of good results among the living patients grantedly is enhanced by the fact that the poor results have been eliminated by death. Yet when all the deaths in the series are included, the effect of the operation on blood pressure levels still remains significantly effective. Of the entire series 46.7 per cent show significant reduction in blood pressure five or more years after operation. The latter computation suggests that all patients who died subsequent to surviving five postoperative years manifested no beneficial effect on blood pressure levels after the fourth postoperative year. Actually this was not so. Thirty-two patients survived five years and subsequently died during their sixth to tenth postoperative years; several of these maintained significant reduction in blood pressure during the intervening years between operation and terminal illness. Nevertheless, in our statistical analyses these 32 cases are not segregated from the overall group of 186 deaths even though they were "five year survivals."

Table 5.—*Postoperative Data*

	Number	Per Cent
Total cases with adequate postoperative information	437	
Total living 5 to 11 years after operation	251	57.5
Total deaths subsequent to operation	186	42.5
Operative mortality in 578 consecutive operations from November 1933 to December 1940	21	3.6

Table 6.—*Subsequent Deaths According to Preoperative Classification*

Group	Number	Per Cent of Total Deaths	Per Cent of Preoperative Group
1	0	0	0
2	4	2	5
3	59	32	38
4	19	10	36
5	13	7	32
6	91	49	81
Total	186		

Of the 5 patients in group 1, with mild and asymptomatic hypertension, 4 have maintained normal blood pressure and 1 has maintained a definite reduction for five years and more (table 10). Of all patients in group 2 who had symptoms and fundus changes but no cardiac, cerebral or renal impairment, 77.2 per cent maintained normal, definitely reduced and significantly reduced blood pressure levels for five years and more. Similar blood pressure reductions were shown by 48 per cent of those with organic heart disease, 52.8 per cent with cerebrovascular disease and 58.4 per cent with renal impairment. Of the patients with preoperative malignant hypertension 16 per cent maintained significant blood pressure reductions for five years and more.

It is thus seen that the patient whose hypertensive state has not yet progressed to evident involvement of the heart, cerebral arteries or kidneys stands an excellent chance for prolonged blood pressure reduction from surgical treatment. Nevertheless a remarkable percentage of patients with organic heart disease, cerebrovascular disease and renal impairment have maintained significant blood pressure reductions for long periods of time.

It may justifiably be assumed that, if a patient had significantly reduced blood pressure at an examination in the seventh or eleventh postoperative year, the reduction had been maintained over the entire postoperative

Table 7.—*Subsequent Deaths According to Sex*

	Number	Per Cent of Total Deaths	Per Cent of Total of Same Sex
Males	117	62	56
Females	69	38	30
Total deaths	186		

Table 8.—*Comparison of Preoperative Age Distribution and Distribution of Deaths According to Preoperative Age*

Peroperative Age	Preoperative Distribution		Distribution of Deaths	
	Number	Per Cent	Number	Per Cent
10 - 19	6	1.4	3	1.6
20 - 29	33	7.6	11	6
30 - 39	120	27	52	28
40 - 49	208	48	88	47
50 - 59	69	15.8	32	17.4
63	1	0.2	..	....
Total cases	437		186	

Table 9.—*Effect of Surgical Treatment on Blood Pressures in 251 Patients Living Five to Eleven Years After Operation*

	Number of Cases According to Preoperative Classification						Per Cent of Living Patients		Per Cent of Total Series, Living and Dead	
	1	1	3	4	5	6				
Reduced to normal (140/90 for ages up to 40) (150/95 for ages over 40)	4	21	9	9	6	2	20.3		11.7	
Definite reduction (more than 80 mm. systolic and 25 mm. diastolic)	1	17	28	6	6	7	26	81.3	15	46.7
Significant reduction (more than 40 mm. systolic and 15 mm. diastolic)	..	17	37	13	12	9	35		20	
No change	..	10	14	4	2	2	12.7			
Increased	..	3	7	2	2	1	6			
Total cases	5	68	95	34	28	21				

Acad. Med. 5: 58, 1935-1936.

hypertensive disease is of much more serious import in

period. Many of the patients in this series have returned to the University Hospital for periodic checkup examinations and for the previous surveys of this series; those who now have significant blood pressure reductions have repeatedly demonstrated this on previous examinations.

TABLE 10.—*Analysis of the Effect of Surgical Treatment on Blood Pressure Levels Five to Eleven Years After Operation in 437 Patients, Including 186 Deaths*

	Preoperative Classification					
Blood Pressure	1	2	3	4	5	6
Reduced to normal.....	80%	30%	6%	17%	14.6%	1.8%
Definite reduction.....	20%	23.6%	18%	11.3%	14.6%	6.2%
Significant reduction.....	....	23.6%	24%	24.5%	29.2%	8%
Unchanged, increased, or subsequent death.....	....	22.8%	52%	47.2%	41.6%	84%

TABLE 11.—*Effect of Surgical Treatment on Symptomatology During Interval Between Operation and Terminal Illness of 186 Deceased Patients*

	Number	Per Cent
Postoperative result		
Definite improvement	41	22
Moderate improvement	48	26
No relief	54	29
No data	43	23
Total cases	186	

EFFECT OF SURGICAL TREATMENT ON HYPERTENSIVE SYMPTOMS

The beneficial effect of surgical treatment on hypertensive symptoms is an established and accepted result. This therapeutic measure must always be considered in the management of hypertensive patients with severe, incapacitating headaches, dizziness, fatigability, epistaxis, urinary frequency and nocturia, nausea and vomiting, or blurring of vision. For these symptoms bilateral supradiaphragmatic splanchnicectomy offers a definite opportunity for relief.

TABLE 12.—*Effect of Surgical Treatment on Symptomatology in 251 Patients Living Five to Eleven Years After Operation*

		Postoperative Result				
Preoperative Status	Total	Complete Relief	Definite Improvement	Moderate Improvement	Unchanged	Worse
No significant symptoms						
Number	8	..	..	..	8	
Per cent	..	..	..	..	(100%)	
Moderate symptoms						
Number	67	14	30	14	5	4
Per cent	..	(21%)	(44.5%)	(21%)	(7.5%)	(6%)
Severe, incapacitating symptoms						
Number	176	47	81	36	7	5
Per cent	..	(27%)	(46%)	(20%)	(4%)	(3%)
Total cases	251					

Of 176 patients who had severe, incapacitating symptoms before operation, 27 per cent were maintaining complete relief five to eleven years later, another 46 per cent felt definitely improved and only 7 per cent were unchanged or worse (table 12). Of 67 patients who had moderate hypertensive symptoms preoperatively 21 per cent now were enjoying complete relief, another 65.5 per cent were definitely or moderately improved and 13.5 per cent were unchanged or worse.

The foregoing statistics do not include the 186 deceased patients in the series. Information obtained from referring physicians and near relatives shows that 22 per cent of the 186 dead obtained definite symptomatic relief during the interval between operation and terminal illness (table 11), 26 per cent obtained moderate relief and 29 per cent no relief. No data were obtained on the remaining 23 per cent.

It is apparent that patients who live a long time after the operation continue to obtain symptomatic benefit during all that time. Relief from the distressing symptom of hypertensive headache is most striking. To observe the previously incapacitated patient return to gainful occupation several months after the operation and still continue at full time work five to eleven years later is most gratifying.

EFFECT OF SURGICAL TREATMENT ON EYEGROUNDS

Of the 251 living patients in the series, only 146 received a recent funduscopic examination five to eleven years postoperatively (table 13). Eleven had normal fundi preoperatively, and all 11 retained this status over the long postoperative period. Thirty patients showed sclerotic changes only of the retinal arterioles, and 83.3 per cent of these remained unchanged while 10 per cent progressed to worse changes. Of the 88 patients who had angiospastic retinitis with or without sclerosis and

TABLE 13.—*Effect of Surgical Treatment on Eyegrounds of 146 Patients Living Five to Eleven Years After Operation*

		Postoperative Result		
Preoperative Status	Cases	Improved	Unchanged	Worse
1. Normal fundi	11	.....	11 (100%)	.....
2. Sclerosis only	30	2 (6.7%)	25 (83.3%)	3 (10%)
3. Angiospastic retinitis, with or without hemorrhages and exudates	88	72 (82%)	15 (17%)	1 (1%)
4. Papilledema	17	17 (100%)		
Total cases	146			

with or without hemorrhages and exudates preoperatively, 82 per cent were improved in that localized vasospasms had disappeared and no new hemorrhages or exudates had occurred; 17 per cent of these 88 patients remained unchanged and 1 was worse.

Twenty-one of 112 preoperative patients with malignant hypertension with severe neuroretinitis and 1 diopter or more of papilledema are still living five to eleven years after operation and 17 received recent funduscopic examination. In all these 17 patients the papilledema had disappeared.

This evaluation of the influence of splanchnicectomy on the ocular fundi in hypertension does not include the 186 deceased patients of the series. Thus from the foregoing statistics one must come to no further conclusion than that among the patients living five to eleven years after operation a remarkably high percentage of those who had had angiospastic retinitis, hemorrhages, exudates or papilledema have maintained funduscopic improvement over the long postoperative period. Greatest improvement occurred in those with preoperative angiospastic retinitis, for it is common for localized vasospasm to disappear postoperatively. On the other hand, sclerosis of the retinal arterioles is a permanent change; the effect of splanchnicectomy in these cases is to limit further progression for all but a small percentage.

EFFECT OF SURGICAL TREATMENT ON THE HEART IN HYPERTENSION

Of the living patients 141 had recent electrocardiograms taken (table 14). Of the 84 patients whose electrocardiograms were normal preoperatively 93 per cent maintained an unchanged, normal electrocardiogram five to eleven years after operation; in only 7 per cent did the electrocardiogram become abnormal. Of the 57 patients who had abnormal preoperative electrocardiograms 52.7 per cent showed significant improvement five to eleven years later, consisting of significant left axis deviation returning to normal or of previously inverted T waves in leads 1 or 2 returning to normal. Of the abnormal electrocardiograms 42 per cent showed no significant change, while 5.3 per cent progressed to worse changes.

Of 80 living patients with normal heart size preoperatively, 91.2 per cent maintained normal heart size by comparative teleoroentgenograms five to eleven years later; 7 patients, or 8.8 per cent, had significant increase in heart size (table 15). Forty-eight living patients had preoperative cardiac enlargement of 18 per cent or more above the predicted normal area. Twenty-five, or 52 per cent, of these patients with enlarged hearts showed significant reduction in heart size. Sixteen of these 25 had had slight cardiac enlargement of 18 to 30 per cent above predicted normal area, and in each instance the teleoroentgenogram five to eleven years after operation showed no cardiac enlargement; the remaining 9 patients had had moderate cardiac enlargement of 30 to 75 per cent above the predicted normal area preoperatively, and each showed significant reduction in size to only slight cardiac enlargement. Only 4.2 per cent of the living patients with preoperative cardiac enlargement now show further increase in heart size.

TABLE 14.—*Effect of Surgical Treatment on the Electrocardiogram in 141 Living Patients Five to Eleven Years After Operation*

Preoperative Status	Cases	Postoperative Status: Significantly Improved	Postoperative Status: No Significant Change	Postoperative Status: Worse
Normal electrocardiogram	84	.....	78 (93%)	6 (7%)
Abnormal electrocardiogram	57	30 (52.7%)	24 (42%)	3 (5.3%)
Total cases	141			

It is remarkable that, of the patients who had heart disease before operation and who are still alive, more than half maintain significant improvement in their electrocardiograms and significant decrease in heart size. But splanchnicectomy has not benefited such a great percentage of the entire group of 154 patients who had organic heart disease prior to operation. Thirty-eight per cent of this group were dead in 1945. In addition, many of the patients who had malignant hypertension subsequently died in congestive heart failure.

Splanchnicectomy has possibly prevented progression to organic heart disease in hypertensive patients who manifested no evidence of cardiac involvement preoperatively. Of 87 patients who did not have heart disease prior to operation, 79 still showed no evidence of heart disease five to eleven years later; only 9 per cent subsequently developed heart disease.

EFFECT OF SURGICAL TREATMENT ON CEREBROVASCULAR DISEASE

There are still living five to eleven years after operation 48 of a total of 73 patients who had had definite cerebral accidents prior to operation. Forty-three of the 48 have had no subsequent cerebral accidents during the long postoperative period. It thus appears that splanchnicectomy affords some protection against subsequent cerebral accidents in those hypertensive patients who have had this unfortunate complication.

TABLE 15.—*Effect of Surgical Treatment on Heart Size, Measured by Teleoroentgenogram, of 128 Living Patients Five to Eleven Years After Operation*

Preoperative Status	Cases	Postoperative Result: Significant Decrease in Heart Size	Postoperative Result: No Significant Change	Postoperative Result: Increase in Heart Size
Normal heart size	80	.....	73 (91.2%)	7 (8.8%)
Cardiac enlargement (18% or more above predicted normal area)	48	25 (52%)	21 (43.8%)	2 (4.2%)
Total cases	128			

Of the 437 patients in this series, 61 have died of cerebrovascular disease. Twenty-five of these deaths occurred in persons who had had preoperative cerebral accidents, and 13 of the 25 also were cases of malignant hypertension. Thirty-six deaths from cerebrovascular disease occurred of patients with no preoperative clinical evidence of such involvement, but 20 were cases of malignant hypertension.

EFFECT OF SURGICAL TREATMENT ON KIDNEY FUNCTION

An eighteen hour concentration test of kidney function[6] was performed recently on 117 of the living patients five to eleven years after operation. Sixty-two of these patients had normal kidney function before operation, and 51 of these have maintained normal concentrating ability for the long period of time since operation; 11 patients have manifested impaired concentrating power since operation (table 16).

Of 55 patients who had impaired kidney function prior to splanchnicectomy 20, or 36.4 per cent, have shown significant improvement in concentrating ability five to eleven years later; 52.6 per cent showed no change, and 11 per cent are worse.

TABLE 16.—*Effect of Surgical Treatment on Renal Concentrating Ability of 117 Patients Living Five to Eleven Years After Operation*

Preoperative Status	Cases	Postoperative Result: Significant Improvement	Postoperative Result: No Change	Postoperative Result: Worse
Normal function	62	.....	51 (82.3%)	11 (17.7%)
Impaired function	55	20 (36.4%)	29 (52.6%)	6 (11%)
Total cases	117			

It appears that a considerable percentage of patients with preoperative impaired kidney function have maintained significant improvement of kidney function during the long period of time since operation. Of the 186 deaths in the series, 21 were caused by uremia.

6. Isberg, E. M., and Newburgh, L. H.: An Eighteen Hour Concentration Test of Kidney Function, Am. J. M. Sc., to be published.

EFFECT OF SURGICAL TREATMENT ON THE LIFE HISTORY OF ESSENTIAL HYPERTENSION

The ultimate test of the value of surgical treatment is whether it significantly alters the inevitable, progressive, fatal course pursued by the great percentage of cases of essential hypertension. Now that a series of surgically treated hypertensive patients has been followed for a long time, fair comparisons can be made with the several series of medically treated cases in the literature.

In Janeway's [7] series of 458 patients, one half of the males had died within four years and one half of the females within five years of the time of development of symptoms; by the tenth year half of the remainder had died. Hamman [8] had a mortality of 30 per cent at the end of five years and 78 per cent at the end of ten years.

King, Carlile and Blackford [9] followed 481 patients for ten to sixteen years, and the mortality was 73 per cent. In half of the cases in their series the discovery of hypertension was purely an incidental finding.

Five years ago Woods and Peet [10] compared 76 patients (included in the present report) who were then alive five to seven years after operation with the series of Keith, Wagener and Barker.[4] The present, larger group of 437 patients followed for a longer time compares just as favorably as the smaller group did five years ago. One hundred and forty-six, or 62 per cent, of the 219 patients in the Keith-Wagener-Barker series had malignant hypertension, while 112, or 26 per cent, of our 437 patients had malignant hypertension; theirs is a more seriously ill group. Only 19 patients, or 8.6 per cent, of their series were alive five to nine years after the first examination. Of our 437 patients 57.5 per cent are living five to eleven years after operation. Our survival rate thus also compares very favorably with that of Janeway, of Hamman and of King, Carlile and Blackford. At the end of five postoperative years, 64.8 per cent of our patients were living.

TABLE 17.—*Causes of Death Up to Eleven Years After Operation of 186 Surgically Treated Patients with Essential Hypertension*

	Number	Per Cent
Congestive heart failure	66	35.4
Cerebrovascular accident	61	32.8
Uremia	21	11.3
Coronary occlusion with myocardial infarction	16	8.6
Dissecting aneurysm of aorta	2	1.1
Causes other than hypertension	10	5.4
Cause unknown	10	5.4
Total cases	186	

It is in malignant hypertension that fair comparisons can be made between our present series and the Keith-Wagener-Barker series. Twenty-one patients, or 19 per cent, of our 112 with malignant hypertension treated surgically are alive five to eleven years after operation. Of the 146 patients with malignant hypertension in the Keith-Wagener-Barker control series 79 per cent were dead at the end of the first year, 88 per cent at the end of the second year, 94 per cent at the end of the third year, 98 per cent at the end of the fourth year and 99 per cent at the end of the fifth year. Only 1 patient with malignant hypertension in the control series survived five years.

Surprisingly, the cases of malignant hypertension in the surgically treated series of de Takáts, Heyer and Keeton [11] did not respond with any benefit. They, just as the Keith-Wagener-Barker control series, had a five year mortality of 99 per cent. They even list malignant hypertension as a contraindication to surgical treatment. Allen and Adson [12] also stated that malignant hypertension does not respond satisfactorily to surgical treatment. We have found that there is hope of prolonged survival for 19 per cent of the patients with malignant hypertension surgically treated. We firmly feel that no patient with malignant hypertension, otherwise suitable for operation, should be denied this 1 chance in 5 to prolonged life of more than five years, compared to the one chance in 146 offered by general medical management.

It appears from comparison of survival statistics that the life span of the hypertensive patient may be significantly lengthened by surgical treatment.

Fifty-one patients in this series have maintained blood pressure levels within normal limits for five to eleven years since operation; 28 show no evidence whatever of hypertensive disease at the present time. These 28 persons not only have maintained normal blood pressure levels, but also they are completely free from symptoms, their eyegrounds are either normal or show only sclerotic changes, and they manifest no evidence of cardiac, cerebral or renal involvement. These 28 persons could be termed "five year cures"; actually we have never made claims that essential hypertension could be cured by splanchnicectomy. The hypertensive predisposition always persists following surgical treatment, regardless of the fall of blood pressure to normal levels.

COMMENT

The foregoing information obtained from observing a large group of surgically treated hypertensive patients over a long period of time should enable more accurate identification of the patients who may obtain good results from operation. The postoperative data have been presented in a manner so that one may now know what to expect from splanchnicectomy in the individual case selected for operation.

Intelligent management of a case of essential hypertension requires a knowledge of the complete clinical profile of the patient. The workup of the patient must include in addition to the routine history and physical examination an ophthalmoscopic examination, electrocardiogram, teleoroentgenogram, excretory pyelogram and kidney function studies. The patient should be followed by checking on these various aspects of hypertensive disease from time to time. Then one may know whether or not the hypertensive state in a given case is progressive in nature. The patient whose hypertensive disease shows evidence of progression and activity is a candidate for surgical treatment.

It is well known that there is a group of persons who tolerate essential hypertension exceedingly well. They live out a normal life span without any symptoms or complicating accidents of hypertensive disease. Naturally, this group needs no active treatment.

7. Janeway, T. C.: A Clinical Study of Hypertensive Cardiovascular Disease, Arch. Int. Med. **12**: 755 (Dec.) 1913.

8. Hamman, L.: Prognosis of Hypertension, Atlantic M. J. **31**: 472 (April) 1928.

9. King, R. L.; Carlile, T., and Blackford, J. M.: Hypertension: Follow-Up Study of 481 Cases, Northwest Med. **41**: 298 (Sept.) 1942.

10. Woods, W. W., and Peet, M. M.: The Surgical Treatment of Hypertension: II. Comparison of Mortality Following Operation with That of the Wagener-Keith Medically Treated Control Series; a Study of Seventy-Six Cases from Five to Seven Years After Operation, J. A. M. A. **117**: 1508 (Nov. 1) 1941.

11. de Takáts, G.; Heyer, H. E., and Keeton, R. W.: The Surgical Approach to Hypertension, J. A. M. A. **118**: 501 (Feb. 14) 1942.

12. Allen, E. V., and Adson, A. W., cited by Wegener, H. P., and Keith, N. M.: Diffuse Arteriolar Disease with Hypertension and the Associated Retinal Lesions, Medicine **18**: 317 (Sept.) 1939.

When elevated blood pressure is discovered as an incidental finding, a complete hypertensive study of the patient is indicated. If the blood pressure is only moderately elevated and there are no symptoms, no fundus abnormality and no cardiac, cerebral or renal involvement, management of the patient by general medical measures and periodic examination is advisable. If evidence of progression is discovered—such as hypertensive symptoms, or angiospastic-retinal changes or cardiac, cerebral or renal involvement—the patient has become a candidate for surgical treatment. No form of medical therapy has yet been shown to be as efficacious as surgical treatment in arresting the pernicious, progressive character of hypertensive disease, promoting improvement and increasing life span.

It has been shown that hypertensive patients with symptoms and fundus changes, but no evidence of cardiac, cerebral or renal involvement—group 2 of our classification—may expect excellent results from surgical treatment. Ninety-five per cent of the patients in this category were living five to eleven years after operation; the five year survival rate was 98.6 per cent, for three of the four deaths in this group occurred subsequent to the fifth postoperative year. Three of the four deaths in this group were from causes other than hypertensive disease, and all 3 patients had maintained normal blood pressure levels until death occurred. One of the 3 deceased patients passed an army final-type physical examination and was commissioned; he maintained a normal blood pressure during two and one half years of rigorous infantry training, and he was killed by a German sniper while at his regimental command post on a Normandy beachhead. The second died of acute intestinal obstruction, and the third died of carcinoma of the testis with metastasis.

Thirty per cent of the patients in group 2 have maintained normal blood pressure levels, and another 47 per cent have maintained definite or significant reductions. Symptoms have been completely relieved or definitely improved and angiospastic-retinal changes have been improved in remarkably high percentages. Their normal electrocardiograms, heart size and kidney function have been adequately protected.

Approximately one third of all the patients who showed preoperative evidence of either organic heart disease, cerebrovascular disease or impaired kidney function did not survive five to eleven years. Evidence of involvement of any one of these vital organ systems is indicative of generalized vascular involvement. Hypertensive heart disease is not to be considered singularly; it is a part of a constitutional disease. Not all patients with hypertensive heart disease die in congestive failure; many die of a cerebrovascular accident and some in uremia. The patient who has had a cerebral accident may later die of a cardiac lesion.

Half of the patients in preoperative groups 3, 4 and 5 may expect significant blood pressure reductions maintained for at least five to eleven years. Their hypertensive symptoms—such as headache, dizziness, tinnitus, epistaxis, fatigability, weakness, nocturia, nervousness, irritability and blurring of vision—and retinal angiospasms are relieved in the same high percentages as in group 2. Of those who had abnormal electrocardiograms and cardiac enlargement before operation and are still living, more than half have maintained significant improvement of these objective aspects for five to eleven years.

Sixty per cent of patients who have suffered a cerebral accident may expect prolonged life with no subsequent cerebral accident after splanchnicectomy.

Nineteen per cent of the 112 patients with preoperative malignant hypertension are living five to eleven years later. Eighteen of these 21 living patients are maintaining significant reductions in blood pressure. Seventeen of these patients received funduscopic examinations, and papilledema had disappeared in all. In the survivors, symptomatic improvement has been remarkable. Splanchnicectomy offers hope for prolonged life to 1 out of every 5 patients with malignant hypertension.

Any patient who is under 60 years of age, who is not in congestive heart failure, whose blood nonprotein nitrogen level is below 45 mg. per hundred cubic centimeters and who has not sustained a major cerebral accident during the previous month may be considered as a reasonable operative risk.

The age of the patient at time of operation has no influence on postoperative survival. The extent of the hypertensive disease process is the important factor in survival.

SUMMARY

Four hundred and thirty-seven patients with essential hypertension have been followed since receiving the surgical treatment of bilateral supradiaphragmatic splanchnicectomy and lower dorsal ganglionectomy five to twelve years ago.

Two hundred and fifty-one patients, or 57.5 per cent of the series, are living five to eleven years after operation. At the end of five postoperative years 64.8 per cent of the entire series was alive. The hypertensive state in 82 per cent of the patients in this series had already progressed to serious organic disease prior to operation.

Fifty-six per cent of all the males have died, while the female mortality was only 30 per cent.

Ninety-five per cent of hypertensive patients who showed no preoperative evidence of cardiac, cerebrovascular or renal involvement are living five to eleven years after operation.

Approximately one third of all patients who manifested preoperative evidence of organic heart disease, cerebrovascular disease or impaired kidney function did not survive five to eleven years.

Nineteen per cent of 112 patients with preoperative malignant hypertension are living five to eleven years later.

Fifty-one patients have maintained normal blood pressure levels and 28 show no evidence whatever of hypertensive disease five to eleven years after operation.

Significant reductions in blood pressure, complete and definite symptomatic relief, improvement of eyegrounds and improvement of abnormal electrocardiograms, cardiac enlargement and kidney concentrating ability have been maintained for five to eleven postoperative years in a remarkable percentage of patients.

Sixty per cent of patients who had previous cerebral accidents suffered no recurrence during the long postoperative period.

Surgical treatment is a measure to be considered in the management of every case of essential hypertension, but to be utilized only when indicated. Evidence of progression and activity of hypertensive disease constitutes indication for surgical treatment.

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EFFECT OF FOLIC ACID ON PERSONS WITH MACROCYTIC ANEMIA IN RELAPSE

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That macrocytic anemia in relapse is promptly relieved by either the parenteral or the oral administration of synthetic folic acid was reported by Spies, Vilter, Koch and Caldwell [1] in November 1945. The following month Vilter, Spies and Koch [2] reported another series of cases in which these results were confirmed. At the same time Spies, López, Menéndez, Minnich and Koch [3] reported that the macrocytic anemia of tropical sprue found in Cuba responds in a similar manner.

The present report, which is a tentative evaluation of the status of folic acid as a therapeutic agent, is presented because of the large number of requests for information from physicians regarding the use of folic acid as a therapeutic agent. It has been disheartening to write to so many physicians that leukemia, aplastic anemia and some of the anemias of undetermined origin do not respond specifically to this substance.

The present communication is based on my observations of the effect of folic acid in anemia. These observations were made on patients in Birmingham, Ala., and in Havana, Cuba. All except 2 of the patients were studied in conjunction with one or more of the associates mentioned.

In selecting the cases, the following criteria were used: 1. The patient must have a macrocytic anemia with red blood cell counts of 2.5 million or less and a color index of over 1. 2. He must be untreated, or he must not have been treated recently enough to interfere in any way with our evaluation of the effect of folic acid. 3. He must not have any complicating disease which might be lethal during the course of the study. 4. The bone marrow must contain megaloblasts and have the typical erythroblastic arrest seen in macrocytic anemia. A fifth criterion used for the selection of any patient in Cuba, where we were studying sprue, was that he must have "fatty stools" and weight loss.

With these criteria in mind, we selected for special study a group of 45 patients. This group included 8 patients with so-called nutritional macrocytic anemia, 8 with pernicious anemia, 11 with sprue, 3 with anemia associated with pregnancy, 1 with anemia associated with carcinoma, 1 with anemia associated with chronic alcoholic addiction, cirrhosis of the liver and neuritis, 3 with anemia of undetermined origin, 3 with aplastic anemia, 3 with anemia associated with leukemia and 4 with iron deficiency anemia.

The diagnoses of the patients shown in the accompanying table were arrived at after intensive study by a number of physicians. The clinical separation of these various syndromes is somewhat arbitrary; but in view of the findings reported in this paper and in our previous publications on folic acid, the classification probably is not of as great importance as it has been considered in the past. As far as possible, the cases are classified arbitrarily in order to aid other investigators who may wish to study the effect of folic acid on similar patients.

Forty-one of the 45 patients had typical macrocytic hyperchromic anemia diagnosed on the basis of criteria used in the past in the Nutrition Clinic at Hillman Hospital.[4] The other 4 patients had iron deficiency anemia characterized by a low color index. A diagnosis of pernicious anemia was made only when there was no free hydrochloric acid, pepsinogen or rennin in the gastric juice after histamine stimulation. A diagnosis of sprue was made only in the presence of steatorrhea. If pregnancy was the only etiologic agent present, a diagnosis of macrocytic anemia of pregnancy was made. If the patient had a blood picture typical of macrocytic anemia and if there was free hydrochloric acid, pepsinogen and rennin in the gastric juice, a diagnosis of nutritional macrocytic anemia was made. In most instances there was complete agreement on the part of the physicians with regard to the clinical classification of these cases. The cases in which there was a difference of opinion were classified as indeterminate.

Pellagra, which was diagnosed only in the presence of characteristic tongue or dermal lesions, was present at the time folic acid therapy was initiated in 7 cases: 1 (case 3) of nutritional macrocytic anemia, 2 (cases 7 and 10) of pernicious anemia, 2 (cases 17 and 19) of sprue, 1 (case 21) classified as indeterminate and 1 (case 24) of macrocytic anemia of pregnancy. In 2 of the cases of pernicious anemia, neurologic alterations indicative of mild postolateral sclerosis were present. In the group of cases classified as nutritional macrocytic anemia, severe polyneuritis was present in 1 and mild peripheral neuritis in 2. In 2 of the cases of sprue there was also evidence of peripheral nerve involvement.

All except 4 of the patients were hospitalized for preliminary observations, base line determinations and treatment. Four of the patients who lived near the Nutrition Clinic in Birmingham were treated as ambulatory cases. They came to the clinic daily throughout the study. A detailed medical and dietary history was obtained and a careful physical examination was made in each case. During the control period and also during the period of most active regeneration, red and white cell counts, reticulocyte counts and hemoglobin determinations were made daily.[3] Thereafter these determinations were made at increased intervals. Bone marrow studies were also made in each case.

The diet of 35 of the 41 hospitalized patients was rigidly controlled during the whole period of study. Meat, meat products, fish and poultry were excluded, and only 1 quart of milk and one egg daily were allowed. Bread, cereals, sugar, fats and vegetables were permitted in any amount desired. In a previous study of anemia, 75 patients had been restricted to this diet, and not 1 of them had had a so-called spontaneous remission. We felt certain, therefore, that any hemopoietic response by the patients on folic acid therapy would be attributable to the folic acid rather than to the foods included in the diet. The other 6 hospitalized patients (the 3 with leukemia and the 3 with aplastic

The folic acid for the study was supplied by Lederle Laboratories, Inc.
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University of Cincinnati Studies in Nutrition at Hillman Hospital, Birmingham, Alabama, and at the Calixto Garcia Hospital, Havana, Cuba, in cooperation with the Institute of Nutrition of Cuba, the Coordination Committee for Cuba and the University of Havana.

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2. Vilter, Carl F.; Spies, Tom D., and Koch, Mary B.: Further Observations of the Antianemic Properties of Synthetic Folic Acid, South. M. J. December 1945.

3. Spies, Tom D.; López, Guillermo García; Menéndez, José Aristides; Minnich, Virginia, and Koch, Mary B.: The Effect of Folic Acid on Sprue, South. M. J., January 1946. Vilter, Spies and Koch.[2]

4. Moore, Carl V.; Vilter, R. W.; Minnich, Virginia, and Spies, T. D.: Nutritional Macrocytic Anemia in Patients with Pellagra or Deficiency of the Vitamin B Complex, J. Lab. & Clin. Med. **29**: 1226-1255 (Dec.) 1944.

anemia) were given the usual hospital diet ad libitum. The 4 ambulatory patients ate their meals at home. However, because of financial limitations these 4 persons were unable to vary their diets to any extent from day to day and, according to their dietary histories, the food they ate at home was similar to that eaten by patients with aplastic anemia, leukemia, cirrhosis of the liver and carcinoma. An adequate diet had been available to all the patients with macrocytic anemia of pregnancy, but vomiting and loss of appetite had caused them to reduce their food intake far below the desired level. In every case of nutritional macrocytic anemia,

Effect of Folic Acid on Peripheral Blood in Macrocytic Anemia

Case No.	Type of Macrocytic Anemia	Red Blood Cells, Million			Hemoglobin, Gm.			Reticulocytes, per Cent			Folic Acid Therapy	
		Initial	14th Day	Final Day	Initial	14th Day	Final Day	1st Day of Rise	Day of Peak	Per Cent at Peak	Daily Dosage, Mg.	Mode of Administration
1	Nutritional	2.16	2.69	4.08 (40)	8.8	9.3	11.7 (40)	4	8	14.8	20	Intramuscular
2	Nutritional	2.98	3.14	3.20 (20)	9.3	8.3	9.2 (20)	4	4	4.6	100	Oral
3	Nutritional	1.64	3.24	4.07 (19)	7.1	10.2	9.8 (19)	3	5	19.2	100	Oral
4	Nutritional	2.01	3.57	3.82 (30)	9.9	10.1	12.1 (30)	6	8	10.9	100	Oral
5	Nutritional	1.79	2.81	3.38 (30)	8.7	11.3	13.0 (30)	3	6	10.0	100	Oral
6	Nutritional	2.97	3.23	3.55 (27)	8.0	10.5	13.4 (27)	3	3	6.6	100	Oral
7	Pernicious	1.95	2.59	3.22 (55)	7.0	9.8	11.0 (55)	6	8	6.4	20	Intravenous
8	Pernicious	1.96	2.92	3.54 (49)	7.8	11.7	12.1 (49)	6	8	14.6	20	Intravenous
9	Pernicious	1.61*	1.58	1.58 (18)	6.2	8.0	8.0 (18)	7	10	11.0	20	Intravenous
10	Pernicious	2.01	2.69	4.22 (40)	8.3	10.7	13.9 (40)	4	6	14.8	100	Oral
11	Pernicious	2.59	3.14	3.72 (21)	8.6	10.6	10.1 (21)	4	7	14.4	100	Oral
12	Sprue	2.11	3.04	3.40 (23)	9.0	10.4	11.7 (23)	5	7	17.2	200	Oral
13	Sprue	2.16	2.66	3.13 (21)	9.5	9.7	9.8 (21)	5	7	17.2	200	Oral
14	Sprue	1.51	2.55	3.25 (20)	6.8	8.6	11.5 (20)	4	6	22.7	200	Oral
15	Sprue	2.17	2.85	2.85 (14)	8.1	10.0	10.0 (14)	6	8	12.5	200	Oral
16	Sprue	1.47	2.47	2.47 (14)	5.9	8.1	8.1 (14)	5	6	31.8	200	Oral
17	Sprue	1.87	2.60	2.60 (14)	8.1	10.0	10.0 (14)	3	6	19.5	200	Oral
18	Sprue	1.63	2.65	2.65 (15)	5.9	8.6	7.5 (15)	5	7	22.9	200	Oral
19	Sprue	1.48	2.72	2.72 (14)	5.9	10.9	10.9 (14)	5	12	18.7	200	Oral
20	Indeterminate	2.35	3.53	4.29 (48)	7.8	9.9	12.4 (48)	5	7	21.4	150	Oral
21	Indeterminate	2.32	3.31	3.38 (21)	8.0	11.2	11.7 (21)	4	7	19.6	100	Oral
22	Indeterminate	1.82	2.23	2.92 (22)	7.7	10.1	9.8 (22)	4	6	10.4	50	Intravenous
23	Pregnancy	1.63	2.30	4.25 (40)	7.3	9.1	12.2 (40)	4	6	29.0	50	Intravenous
24	Pregnancy	1.30	2.10	3.80 (30)	7.0	9.0	12.1 (30)	4	7	24.0	20	Intravenous
25	Pregnancy	1.80	2.70	3.90 (25)	9.0	10.1	11.6 (25)	4	6	23.1	20	Intramuscular
26	Associated with chronic alcoholic addiction, cirrhosis and neuritis	1.30	1.91	2.60 (30)	6.9	8.1	9.8 (30)	5	7	17.2	100	Oral
27	Carcinoma	1.10	1.92	3.19 (40)	6.5	7.1	7.8 (40)	4	7	17.2	100	Oral
28-45 inclusive, see text												

* In case 9 the initial red blood cell count is interpreted as being in error since it is out of line with the other determinations. At any rate the blood responded following treatment.

the patients on the controlled diet. As soon as the studies were completed, each patient was advised to eat a liberal, well balanced diet including lean meat, eggs and milk.

The diet of 2 patients with pernicious anemia and pellagra had been inadequate for many years. Of the other 3 patients with pernicious anemia the diet had been well balanced and, as a rule, adequate, although in some instances the total food intake had been reduced because of loss of appetite. This was true also of the in every case of sprue and in the 3 indeterminate cases the diet had been grossly inadequate for several years. Although some of the patients included in this study live in Alabama and others live in Cuba, an analysis of their diets showed that, while the types of foods differed somewhat in the two countries, the nutritional quality of the diets of the two groups was strikingly similar. In both groups the diets tended to be low in animal proteins, minerals and vitamins, high in concentrated carbohydrates and relatively high in fat.

All the patients complained of loss of strength, vigor and appetite, and in most instances there had been a considerable loss of body weight. The diarrhea of the patients with sprue was characterized by stools which ranged in frequency from five to twenty times daily. The stools were yellow or white, watery, foamy and foul in odor. When diarrhea was present in cases other than sprue, the stools were watery and brownish, and the odor was not particularly foul. All the patients with diarrhea stated that it was more severe after meals.

The folic acid was administered either parenterally or orally. In 2 cases it was administered intramuscularly and in 6 cases intravenously. In order to get the folic acid into solution for parenteral administration, we converted it into a soluble salt by adding a normal sodium bicarbonate solution. To insure sterility the solution was then passed through a Seitz filter. When the folic acid was given orally in amounts of 20 mg. or more a day, one half the total dose was given in the morning and the other half in the afternoon. For oral administration each dose was prepared by mixing the folic acid to a smooth paste with four or five drops of cold water and then adding 20 cc. of cold water while the mixture was stirred constantly. After the patient drank this material, a small amount of water was used to rinse the glass thoroughly, and the patient drank this also to insure his getting as much of the folic acid as possible.

The laboratory findings and the response to folic acid therapy can be seen in the table, in which the results in 27 cases are shown. Data on 18 patients are not included in the table: 3 with aplastic anemia, 4 with iron deficiency anemia and 3 with the anemia associated with leukemia, none of whom responded to folic acid therapy; 5 patients [5] in whom we were attempting to establish the minimal dosage of folic acid and who did respond satisfactorily though perhaps not maximally on the amount administered (study of these cases is being continued, but it is too early to present data on them), and 3 patients with sprue who, we noted during the preliminary period of observation, were having a hemopoietic response. These 3 patients denied having had antianemic therapy recently, but on further questioning we found that they had been treated although they did not realize that they had received treatment for anemia. This indicates the importance of making base-line determinations in every case. Because these 3 persons had received antianemic therapy recently, they were not given folic acid at this time.

The results presented in the table show that only 1 of the patients included (patient 2) failed to respond to folic acid in amounts above 10 mg. a day. Although this patient is classified as having nutritional macrocytic anemia, a satisfactory diagnosis has never been made despite the fact that she has been seen by many competent physicians. The patient is still under observation in an endeavor to obtain more exact hematologic information.

The white blood cell counts of patients with nutritional leukopenia are not shown in the table. The white blood cells also tended to increase following the administration of synthetic folic acid. Early observations on this study were reported recently by Berry, Spies and Doan [6] and by Vilter, Spies and Koch.[2]

Prompt improvement occurred in the general condition of 26 of the 27 patients reported in the table. On the third or fourth day following the initiation of folic acid therapy these 26 patients volunteered that they felt stronger. At the same time there was a definite improvement in their appetites: those under observation in the hospital began eating all the food on their trays and frequently asked for additional servings, and those who were being treated as ambulatory patients and who ate their meals at home voluntarily told us that they had a similar improvement in appetite. This subjective improvement coincided with or was followed by an increase in the reticulocytes in the peripheral blood and by subsequent rises in the red blood cells and in the hemoglobin content of the blood. The reticulocytes began to rise on the third, fourth, fifth or sixth day of folic acid therapy and reached a peak on the sixth, seventh or eighth day. This improvement occurred regardless of the mode of administration.

It is of considerable interest that the case of macrocytic anemia associated with chronic alcoholic addiction, cirrhosis of the liver and peripheral neuritis (case 26) and the case of macrocytic anemia associated with carcinoma of the stomach with metastasis to the lungs (case 27) each showed a significant hemopoietic response following folic acid therapy.

In the patients with aplastic anemia, leukemia and iron deficiency, no improvement could be detected either clinically or by means of laboratory determinations.

SUMMARY AND CONCLUSIONS

These findings and others that my associates and I have reported show that synthetic folic acid administered either parenterally or orally is effective in producing a significant hemopoietic response in persons with nutritional macrocytic anemia, or with the macrocytic anemias of pellagra, of pernicious anemia, of sprue or of pregnancy. This hemopoietic response is characterized by an increase in reticulocytes, red blood cells, white blood cells, platelets, normoblasts and hemoglobin. The megaloblasts in the bone marrow are decreased following therapy.

It is worthy of emphasis that none of the patients with aplastic anemia, iron deficiency anemia or the anemia associated with leukemia showed any improvement. We have found that folic acid corrects the leukopenia of certain nutritional conditions but does not correct the leukopenia of a number of infectious diseases or idiopathic states.

The subjective and the objective improvement which follows the administration of folic acid to persons with macrocytic anemia in relapse is similar to that which follows liver extract therapy. There is a tremendous upsurge of well-being, an increase in strength and vigor, a return of appetite and a desire to walk about. It is too early in our studies to know whether or not folic acid is as effective as liver extract in maintaining the blood levels or in protecting against combined system disease.

The exact minimal and optimal doses of folic acid have not been determined, but our studies indicate that there is some variation from patient to patient. Although we have found that the administration of as much as 400 mg. daily has not caused any untoward symptoms, a daily dosage of from 5 to 10 mg. parenterally or some 10 mg. by mouth will often produce a maximum hemopoietic response. In order to determine the optimal and the average doses, the study of many patients will be required. The response of 5 patients to a daily dosage of 10 mg. by mouth may be an indication that the average doses, when they are finally determined, will be lower than those we are suggesting at this time.

5. Unpublished observations by Tom D. Spies, Carl F. Vilter and Richard W. Vilter.

6. Berry, L. Joe; Spies, Tom D., and Doan, Charles A.: A Note on the Influence of "Folic Acid" on Leukocyte Equilibrium in Malnourished Patients, South. M. J. **38**: 590-592 (Sept.) 1945.

Unpublished observations of mine have shown that dried brewers' yeast powder, yeast concentrate or liver extract produces a response in persons with macrocytic anemia in relapse, a response which is out of proportion to the folic acid content of these substances. A number of patients have failed to respond fully to folic acid at the level of 3 or 4 mg. per day by mouth and have responded to liver extract or yeast administered in amounts which supply 1 mg. or less of folic acid daily. These findings suggest that the antianemic factor present in liver extract or yeast may be a combination of chemical substances or that it may be a much larger molecule than folic acid. From a practical point of view it must be stressed, however, that folic acid administered either orally or parenterally will give a satisfactory response in patients with macrocytic anemia.

I have studied 2 additional patients with macrocytic anemia who have developed such severe sensitivity to various forms of liver extract that they were unable to tolerate injections in sufficient amounts to maintain proper blood values. In both cases folic acid was substituted for the liver extract safely and satisfactorily.

It must be stressed that neither folic acid nor any other single chemical substance can be expected to take the place of all the nutrients essential for health. The patients in this study were given a restricted diet in order to test more effectively the antianemic properties of folic acid. A restricted diet is not recommended in the treatment of macrocytic anemia. On the contrary, we prescribe a diet high in protein, minerals and vitamins.

The laboratory observations obtained from frequent examinations of stools and bone marrows will form the basis of a separate report. Suffice it to say that the stools and the bone marrow both tend to approach normal following administration of a satisfactory amount of folic acid.

Despite the fact that there are no published reports confirming this work,[7] the findings are so striking that I have no hesitancy in making the statement that folic acid (synthetic Lactobacillus casei factor), a vitamin present in liver, yeast and other food materials, is a potent antianemic factor in certain types of macrocytic anemia in relapse. Folic acid performs a specific function in the maturation of the various cells of the bone marrow and has other obvious profound effects on our bodies.

7. Since this writing, personal communications from C. A. Doan and his associates at Columbus, Ohio, and from C. V. Moore and his associates at St. Louis have been received confirming the antianemic action of folic acid.

Intracranial Pressure.—Sudden intense increased intracranial pressure is brought about by deformation of the skull and acceleration of the head. The well known observation that the cranial cavity is spheroid in shape and that any change in its diameters would tend to decrease its volume capacity indicates one cause for increased intracranial pressure in closed wounds of the head. Another is the sudden setting of the head to motion or acceleration. Severe circumscribed depressed fractures may be associated with increased pressure due to the plunger effect of the depression. More extensive depressions may be associated with increased intracranial pressure, depending on their extent and the time period of their production. Cannon and Kocher felt that there was an increase in intracranial pressure at the time of the blow, and Scott demonstrated this change by the use of the Hamilton manometer. The increase in pressure is of such short duration that ordinary means of recording do not demonstrate it.—Gurdjian, E. S., and Webster, J. E.: Experimental and Clinical Studies on the Mechanism of Head Injury, in Trauma of the Central Nervous System, Baltimore, Williams & Wilkins Company, 1945.

SEVERE POSTOPERATIVE HYPOGLYCEMIA

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The clinical state associated with hypoglycemia is assuming an increasing importance in the differential diagnosis of atypical nervous system reactions. Since the first description of this condition by Harris [1] in 1924 there has developed a large body of literature pertaining in particular to etiologic mechanisms. Many organs of the body, including the liver, pancreas, adrenal, thyroid and pituitary, have seemed to play a role in various instances, but there have been certain other cases for which no acceptable explanation was apparent.

In the numerous reports of these cases of unexplained spontaneous hypoglycemia, little has been written concerning a decrease in blood sugar in previously asymptomatic individuals following a surgical procedure. Coma following an operation, while relatively rare, is a disturbing complication and the cases reported here illustrate another etiologic possibility which must be considered in the presence of this perplexing problem. In the past two years we have had 3 examples of such profound hypoglycemia following surgical procedures:

CASE 1.—Mrs. E. K., aged 76, white, a housewife, admitted to the fracture service of the Presbyterian Hospital for the second time on Sept. 16, 1943, complained of pain in the left hip of four months' duration. Her first admission had been in September 1941 for a fracture of the neck of the left femur. This had been successfully treated by fixation with a Smith-Petersen nail. She had been well since that time except for considerable fatigue, which was occasionally accompanied by substernal pressure and moderate dyspnea. Her general health had always been good and she had had no weight loss, headaches, vertigo or fever. She had never had ankle edema, orthopnea, cough or cyanosis. Her son stated that on several occasions she had complained of mild vertigo in the midafternoon or at bedtime. At the age of 22 she had a uterine fibroid removed and had had typhoid at 12. The family history was noncontributory. The patient was thin and nervous. The only positive findings on physical examination were slight narrowing of the arterioles of the fundi, a lower abdominal scar and a blood pressure of 160/88. Reflexes and neurologic signs were not abnormal.

Laboratory examination revealed hemoglobin 14.5 Gm., red blood cells 4.7 million and white blood cells 8,250 with 48 per cent polymorphonuclears, 45 per cent lymphocytes, 4 per cent monocytes and 3 per cent eosinophils. The urine was normal. An electrocardiogram showed low voltage of T_1 and isoelectric T_4F which suggested some myocardial damage. X-ray examination of the heart showed no evidence of cardiac enlargement.

On the fifth hospital day the Smith-Petersen nail was removed from the left hip. The preoperative medication was morphine sulfate 0.006 Gm. and scopolamine 0.0003 Gm. Anesthesia was local with procaine hydrochloride and the total duration of the procedure was forty minutes. No epinephrine or nitrous oxide was used. The patient withstood the procedure well and was returned to her room in good condition. Five hours later she began to feel very weak and thirsty and perspired freely. The lungs were clear and the blood pressure was 160/78. The pulse was irregular. Within two hours she was stuporous and perspiring profoundly but could be aroused. Blood pressure was 140/40. There was no cyanosis, and the lungs were clear. The speech had become sluggish, and she complained of a sense of pressure in the chest. In view of the past history of substernal oppression a myocardial infarction was suspected, but the picture more closely resembled the hypoglycemic state and therefore the blood sugar was determined, 24 mg. per hundred cubic

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1. Harris, S.: Hyperinsulinism and Dysinsulinism, J. A. M. A. **83**: 729-733 (Sept. 6) 1924.

centimeters. Following an infusion of 5 per cent dextrose in saline solution the patient gradually improved, so that within six hours she was well oriented and talkative.

Next day the patient had four tonic-clonic convulsions, relieved immediately by intravenous 50 per cent glucose. Her blood sugar during these episodes was as low as 35 mg. per hundred cubic centimeters. Serum bicarbonate was 20.9 milliequivalents per liter and serum chlorides 107.3 milliequivalents per liter. An electrocardiogram taken this day showed changes which suggested an active process in the myocardium. Because of the persistent hypoglycemia the patient was started on a continuous intravenous drip of saline solution alternating with 10 per cent glucose. During the first postoperative day she received 75 Gm. of glucose. In order to increase this, on the following day a Miller-Abbott tube was introduced, and this, plus the intravenous route, allowed an intake of 1,050 Gm. of carbohydrate. Approximately the same regimen was continued. The fluid intake and output were more than adequate throughout.

During the ensuing days it was found that the patient required from 800 to 1,000 Gm. of glucose daily to remain out of hypoglycemia, but even on this regimen the blood sugar was as low as 39 mg. per hundred cubic centimeters. On the fourth postoperative day it was obvious that the patient was losing ground. Her fasting blood sugar was 40 mg. per hundred cubic centimeters; it was also 40 mg. per hundred cubic centimeters before lunch and rose only to 61 mg. per hundred cubic centimeters following the meal. Serum chlorides were 100 mEq./L., bicarbonate was 20.1 mEq./L., and the "calculated serum sodium" 130 mEq./L. The blood count showed only a mild anemia with no leukocytosis. An electrocardiogram taken that day showed further changes diagnostic of myocardial damage. X-ray examination of the chest showed peribronchial consolidation in the middle zone of the right lung. Her temperature had gone to 102.4 F. immediately after operation and to 103 F. on the second postoperative day, and now on the fourth day it rose suddenly to 103 F. A transfusion was given at this time and seemed to improve the general condition. She had considerable diarrhea, believed to be due to the tube feedings of glucose.

Because of the possibility of a pancreatic adenoma, an emergency exploratory operation was done on the fourth postoperative day. At operation there was a moderate amount of amber colored peritoneal fluid. The peritoneum was not inflamed, but the stomach was distended. The liver was smaller than normal, was dark green and showed numerous areas of fibrosis, especially in the region of the gallbladder. The whole organ was much firmer than usual. The gallbladder was normal. No abnormalities were seen or felt in the pancreas after careful examination. By the time the pancreas was exposed the heart beat had become imperceptible, and in spite of continued artificial respiration the patient died. Permission for autopsy was not granted.

Case 2.—V. U., a white man aged 27, a lawyer, was admitted to the urologic service of the Presbyterian Hospital on May 10, 1944 complaining of intermittent hematuria, left inguinal pain and urinary frequency of six months' duration. His past history and family history were noncontributory. There was no history of tuberculosis, acute rheumatic fever, diabetes or heart disease. Seven years previous to admission he had had an operation for intestinal obstruction, and subsequently an ectopic right kidney was removed following a severe attack of pain during the convalescent period. The appendix had been removed fifteen years previous to the present admission. Following the removal of the right kidney the patient had intermittent painless hematuria until six months before admission, when it became associated with left inguinal pain, frequency of urination and vomiting, which continued to the time of admission. There had been a 5 pound (2.3 Kg.) weight loss in two years. On physical examination the patient appeared well developed and in no acute distress. The temperature was 99.6 F., pulse rate 76, respiratory rate 20 and blood pressure 130/80. There were a McBurney incision and lower right rectus scars. The liver and left kidney were palpable but not tender. There was a well healed scar on the lateral aspect of the left thigh and upper part of the leg. Neurologic examination was negative.

Laboratory examination revealed hemoglobin 16.2 Gm., red blood cells 5.22 million, white blood cells 5,600 with 67 per cent polymorphonuclears, lymphocytes 30 per cent, monocytes 3 per cent. The urine showed a specific gravity of 1.011, alkaline reaction, albumin 2 plus, glucose negative and microscopically 15 to 20 red blood cells and 25 to 35 white blood cells per high power field. The Kline reaction was negative. The sedimentation rate was 3 mm. fall in one hour. Blood urea nitrogen was 9.8 mg. per hundred cubic centimeters. Retrograde pyelography demonstrated the presence of renal calculi in a nonrotated hydronephrotic left kidney and an absent right kidney.

In view of these findings a left pyelolithotomy was done on the fifth hospital day. The preoperative medication was morphine sulfate 0.012 Gm. and scopolamine 0.0004 Gm. The anesthesia was nitrous oxide, oxygen and ether by the closed method. The anesthesia was without incident and the duration of the operation thirty minutes. At operation two large stones composed of calcium and ammonium phosphates were removed from the left kidney pelvis. The blood pressure remained normal throughout the operation, and the condition of the patient was satisfactory at the end of the procedure.

Postoperatively the patient was given only 1,500 cc. of isotonic solution of sodium chloride. Ten hours later he was found to be moderately stuporous and within two hours comatose. The blood pressure was 120/55. Both diabetic coma and uremia were considered. Urinalysis showed a specific gravity of 1.013, albumin 4 plus, glucose negative and microscopically a few pus cells. Four hours later the patient was still comatose, had developed Cheyne-Stokes respiration, was perspiring profusely and had conjugate deviation of the eyes to the right with nystagmus to the right. The pupils were fixed to light. Reflexes were equal and active, and the Chvostek sign was negative. Intravenous calcium gluconate was given with no benefit. Blood sugar taken at the time was 38.5 mg. per hundred cubic centimeters, serum bicarbonate 20.5 mEq./L., urea nitrogen 18.2 mg. per hundred cubic centimeters. Fifty cc. of 50 per cent glucose solution was given intravenously, with gratifying improvement. The patient roused immediately and became oriented. The respirations became normal and the pupils again reacted to light. There were no localizing neurologic signs. A continuous intravenous drip of 10 per cent glucose was started, but the patient continued to have recurrent coma and restlessness. The patient was seen later that day by a neurologist, who believed the condition to be a result of hypoglycemia with possible permanent cerebral damage. A lumbar puncture was done. The fluid was crystal clear at a pressure of 196 mm. with normal manometric studies. It contained 4 cells per cubic millimeter, protein was 43 mg. per hundred cubic centimeters and the Wassermann reaction was negative. On the first postoperative day the temperature began to rise and did so steadily. It was considered that the patient possibly had an atypical pancreatic adenoma, and for this reason exploration was done. At the operation the duodenum was mobilized and after careful investigation no pathologic condition could be found in the pancreas. A biopsy of the liver was done at the time, which showed no abnormalities. The patient's blood sugar two hours after operation was 143 mg. per hundred cubic centimeters, but he remained in coma in spite of intravenous 50 per cent glucose solution. Blood sugars before and seventeen minutes after the administration of epinephrine showed no change at this time. There was a leukocytosis of 21,500, with polymorphonuclears 88 per cent. The serum bicarbonate was 21.9 mEq./L., chlorides 103.8 mEq./L. Two 10 mg. doses of desoxycorticosterone acetate were given with no beneficial results.

The patient continued in coma and on the seventh hospital day the temperature suddenly went to 107 F. and he died. Permission for autopsy was not granted.

Case 3.—E. L., a white man aged 55, a photographer, was admitted to the surgical service of the Presbyterian Hospital on Feb. 20, 1945 complaining of abdominal pain of three days' duration. Family and past history were noncontributory. For several months preceding admission he had felt considerable fatigue, particularly in the afternoon, but this was not related to the intake of food. There was occasional mild vertigo with

these episodes but no particular perspiration. The patient had been greatly overworking for several months preceding admission. He was well until three days before admission, at which time he developed nonradiating pain in the lower part of the right upper quadrant just to the right of the umbilicus. This pain came on at night and was intense enough to prevent sleep. Accompanying this was a moderate amount of "heartburn" and considerable anorexia but no nausea. Bowel movements were normal. This pain was very persistent and continued to the day of admission. The day before, following the taking of sodium bicarbonate in warm water, he vomited, with some relief. On physical examination he was alert and cooperative and appeared to be in mild distress. There was considerable tenderness in the right upper quadrant and to a lesser degree over the entire right side of the abdomen. There was also a left indirect inguinal hernia and some tenderness in the right subcostal region. Blood pressure was 140/80.

Laboratory examination revealed white blood cells 14,100 with polymorphonuclears 84 per cent, lymphocytes 9 per cent, monocytes 6 per cent and basophils 1 per cent. The urine showed a specific gravity of 1.027, acid reaction, albumin 1 plus, glucose negative and microscopically 5 to 6 red blood cells and a rare white cell per high power field. The Kline reaction was negative. A flat plate of the abdomen showed no urinary calculi.

The patient was observed for two days in the hospital and the abdomen became definitely more tender over the right upper quadrant, but during the second day this tenderness moved down into the right lower quadrant, especially laterally, and it was considered that the appendix was the most probable source of difficulty. Therefore, on the second hospital day an exploratory celiotomy was done under nitrous oxide, ether and oxygen anesthesia by the closed method. The preoperative medication was morphine sulfate 0.012 Gm. and scopolamine 0.0005 Gm. The duration of the anesthesia was one hour and twenty minutes. The procedure was done through a right lower quadrant intermuscular incision. No pathologic condition was found, but the appendix was removed and on section showed only distal occlusion. The patient had vomited once during the induction state of anesthesia but had been in good condition otherwise. After completion of the operation he suddenly became quite cyanotic. The pulse was 84 and of good quality and the blood pressure, which had been 120/70, went only to 130/70. He responded well to oxygen and was supported by this measure for three hours in the operating room. During this period he responded slightly and it was noticed that the right eye was divergent. The left side of the chest showed relative limitation of movement and therefore bronchoscopy was done while he was still in the operating room and a moderate amount of mucus was removed. Aspiration of gastric contents or a cerebrovascular accident was suggested as a possible complication. During the next twenty-four hours the patient responded to a moderate degree but was very drowsy and difficult to arouse. The following morning a blood sugar test was 42 mg. per hundred cubic centimeters and he was again comatose. He had been moderately alert during the preceding six hours. Blood pressure was 120/80, temperature 102 F., pulse rate 88, respiratory rate 12. All extremities were flaccid and there was a slightly positive Babinski sign on the right. The knee jerks were absent. The pupils were small but reacted to light, and there was a right external strabismus. The left side of the chest was still relatively limited in motion. Nonprotein nitrogen was 43 mg. per hundred cubic centimeters. The x-ray of the chest showed peribronchial pneumonia at the right lung base. For this sulfadiazine was given and a level of 7 to 15 mg. per hundred cubic centimeters maintained. Because of the hypoglycemia the patient was put on a regimen of 5 and 10 per cent glucose intravenously and in spite of this was alternately in and out of hypoglycemic shock. A lumbar puncture was done and yielded crystal clear fluid at an initial pressure of 200 mm. The protein was 31 mg. per hundred cubic centimeters and sugar 56 mg. per hundred cubic centimeters. Alcohol and cholesterin Wassermann antigens were negative. X-ray examination of the skull showed no abnormalities.

The patient was continued on intravenous glucose for the hypoglycemia, and oxygen for the persistent cyanosis and dyspnea. The presence of an expanding intracranial lesion was believed to be improbable. Further chemical studies were done in an effort to find a solution. Serum bicarbonate was 29.7 mEq./L., serum amylase 32 units, inorganic phosphorus 4 mg. per hundred cubic centimeters, alkaline phosphatase 5.3 Bodansky units, urea nitrogen 18 mg. per hundred cubic centimeters, serum bilirubin a very faint trace, cholesterol 150 mg. per hundred cubic centimeters, total serum protein 6.5 per cent, albumin 4 per cent, globulin 2.5 per cent, cephalin flocculation negative. There was no anemia or leukocytosis. The sedimentation rate was 66 mm. in one hour. Venous pressure was 76 mm. of saline solution.

During the postoperative course the patient had many blood sugar determinations. The lowest recorded was 21 mg. per hundred cubic centimeters. During the first three days the patient's state of consciousness was well correlated with the degree of hypoglycemia as controlled by glucose injection. At that time he was placed on a regimen of epinephrine in oil intramuscularly 1 mg. every four hours, and a high protein diet. He was given 100 cc. of amigen and 100 cc. of orange juice by stomach tube on alternate hours. On this intake of 1,000 to 1,200 Gm. of carbohydrate in each twenty-four hours his blood sugar was maintained around 80 mg. per hundred cubic centimeters.

On the fourth postoperative day with no change in regimen the blood sugar went to 314 mg. per hundred cubic centimeters and continued in that range, reaching a high of 482 mg. per hundred cubic centimeters. There was an accompanying glycosuria. The following day the amigen diet was discontinued and, as he was then completely conscious and cooperative, a regular diet started. No insulin was given. By the following morning the blood sugar was 64 mg. per hundred cubic centimeters and the patient was again stuporous. However, this state was transient and his blood sugar soon returned to normal limits and he became asymptomatic. It was thought inadvisable to do a glucose tolerance curve. A cholecystogram done just before discharge revealed a definite gallbladder calculus. He left the hospital on the twenty-second day asymptomatic and on a regular diet without supplemental feedings. A fasting blood sugar done two weeks after discharge was 98 mg. per hundred cubic centimeters, and six weeks later he is apparently normal.

COMMENT

Conn [2] has offered a very complete classification of the etiologic mechanisms productive of hypoglycemia, but none of these cases fit into his schema. There was no evidence of disorder in the adrenals, pituitary, thyroid or ovaries. The pancreas as the primary factor must be considered. In the first 2 cases exploration did not necessarily rule out the pancreatic origin of the low blood sugar. Such factors as extrapancreatic islet cell tumors and diffuse hyperplasia of the pancreas [3] should be mentioned. However, with the sudden onset and the previously negative history their existence seems improbable. Harris [4] has shown that a subacute pancreatitis can produce symptoms of hypoglycemia. With the persistent elevation of the sedimentation rate in the third case plus the history of abdominal pain with no surgical pathologic change to account for it, the possibility of such a lesion must be admitted. The atypical history, normal amylase, severity of the hypoglycemia and again the fact that it came on suddenly following a surgical procedure provide evidence to the contrary.

2. Conn, J. W.: The Spontaneous Hypoglycemias: Importance of Etiology in Determining Treatment, J. A. M. A. **115**: 1669-1675 (Nov. 16) 1940.

3. Valk, A. deT., and MacMillan, E. A.: True Hyperinsulinism Due to Diffuse Hyperplasia of Islet Tissue, North Carolina M. J. **2**: 648-652 (Dec.) 1941.

4. Harris, S.: Hyperinsulinism: Definite Disease Entity; Etiology, Pathology, Symptoms, Diagnosis, Prognosis and Treatment of Spontaneous Insulogenic Hypoglycemia (Hyperinsulinism), J. A. M. A. **101**: 1958-1965 (Dec. 16) 1933.

Serious liver damage is a recognized source of hypoglycemia. In case 1 there was evidence of fairly definite cirrhosis, but the liver was not involved in the other 2 cases. However, it is unusual [5] to find clinical or laboratory evidence of hypoglycemia in any but the most pronounced involvement of the liver parenchyma, and such was not the case in the patients in this series.

Patient 3 was known to have cholelithiasis. Coller and Jackson [6] believe that gallbladder disease and involvement of the biliary tract may cause changes in liver function of sufficient intensity to produce hypoglycemia. Conn [2] reported the occurrence of hypoglycemia in a patient with cholecystitis relieved by cholecystectomy. Although a similar situation cannot be definitely ruled out in our case, it again seems improbable in view of the sudden onset and the absence of evidence of acute gallbladder disease.

The possibility of a primary disturbance in the central nervous system must be mentioned. It is known experimentally [7] that stimulation of the right vagus will produce hypoglycemia, but only of a minor degree. Furthermore, Keller [8] found it necessary to sever free the ventral one third to one half of the thalamus in order to produce a hypoglycemic crisis in the dog. With this information in mind and considering the intensity of the hypoglycemia in these cases, it seems unjustified to assume that such a nervous system lesion is the cause of the hypoglycemic state in our patients.

Quirno and Linzoain [9] in 1943 reported a case of hypoglycemia in a woman following a cesarean section. The authors were of the opinion that possible causes were the known diminution in liver glycogen in pregnant women, plus the increased utilization during labor, and the added factor of an absolute lack of carbohydrate intake for forty-eight hours from the time of the operation to the onset of symptoms. The patient subsequently recovered.

Holman, Wood and Stockton [10] in 1943 reported a case of hypoglycemia of severe degree in which recovery occurred spontaneously following pancreatic exploration with negative findings. No explanation was offered for the phenomenon.

Failing to demonstrate in our patients any of the well recognized mechanisms productive of hypoglycemia, the next step is a search for some common denominator. The surgical procedures were in no way similar nor was the anesthesia; local anesthesia was used in only 1 case. The known common factors were morphine, scopolamine and the general shock of an operation. It is difficult to accept these routine therapies as a significant contribution to the production of hypoglycemia, although it is perhaps more than a coincidence that all three followed immediately on a surgical operation.

While in the present state of our knowledge it is idle to speculate as to the cause of the reactions, it is nevertheless worth while to point out that hypoglycemia should be considered when there are unusual responses during or following an operation. Differentiation from surgical shock might at times be a problem. According to Papper and his associates [11] the characteristic differentiating points are those of severe diaphoresis, an increased pulse pressure and a forceful pulse in hypoglycemic shock as opposed to a decreased pulse pressure and thready pulse in surgical shock. Hypoglycemic shock postoperatively is not a common occurrence, and its consequences if untreated are serious. Since it is easily diagnosed and amenable to therapy in its early stages, its recognition is of prime importance.

SUMMARY

1. Of 3 unusual cases of severe postoperative hypoglycemia 2 ended fatally. The third patient recovered and has remained normal to date.

2. In spite of a consideration of the possible etiologic mechanisms, no explanation of the phenomena seems apparent.

3. Although rare, the hypoglycemic state must be considered and a blood sugar level determined in any abnormal central nervous system response following a surgical procedure, even though it is a minor one.

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UNCOMMON CLINICAL MANIFESTATIONS OF VIVAX MALARIA

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The clinical diagnosis of vivax malaria in this country is often not difficult. The patient, in many instances, can suggest the correct diagnosis at the onset of an attack, and this can easily be confirmed by the demonstration of malarial parasites in one or more examinations of blood smears. There is a history of residence in an endemic area and, except for the first attack, there have been previous similar attacks. The symptoms of a "paroxysm" (acute attack) as a rule are quite characteristic, consisting of chilliness followed by a chill of varying severity and high fever of short duration followed by sweating, headache, backache, generalized aching and malaise, weakness, abdominal pain and tenderness and frequently nausea and vomiting. Vague muscular and joint pains, malaise, headache, backache and slight fever may precede the acute attack by several days.

Without treatment, paroxysms recur daily or every other day for a varying period. In a small number of patients spontaneous recovery takes place after one or more days, while in the majority of untreated patients the disease continues its activity for an extended period. With proper treatment there is prompt control of fever and other symptoms, and usually recovery from the acute attack is complete within a week. Complications or sequelae are rare, but one or more relapses follow in a majority of cases.

In studies comprising large numbers of patients with infections due to Plasmodium vivax several distinctly uncommon clinical manifestations have been encountered. Unless one is familiar with such modes of onset

the diagnosis of vivax malaria may not be suspected, correct treatment will be delayed, and in some instances other treatment potentially dangerous to the patient may be instituted. Our purpose in this paper is to present briefly a few of the less common clinical manifestations of malaria due to P. vivax.

A. "DELAYED PRIMARY" ATTACKS SIMULATING FEVERS OF UNKNOWN ORIGIN

Military or civilian personnel who have been on duty in endemic areas and have taken quinacrine regularly and in sufficient amounts for effective suppression will give no history of malaria while overseas. Sooner or later after they have returned to the United States they will discontinue taking suppressive medication. Those who have been infected with P. vivax will exhibit clinical signs and symptoms of active malaria within several weeks or months after stopping quinacrine. The onset of the disease in this group as well as in primary attacks when no antimalarial had been taken frequently does not conform to that usually associated with malaria by the general practitioner. The disease may begin insidiously with malaise and headache. The temperature, which is elevated slightly at the onset, rises gradually or abruptly within a few days to 103 or 104 F. and the pattern of the temperature may be completely irregular or of a septic remittent type. Severe shaking chills, which are so characteristic of relapses, may be absent during the first few days of the delayed primary attack despite high fever. Further, and often confusing to the physician, is the fact that one or two routine smears made early may be negative for malaria parasites. We have seen patients with delayed primary vivax malaria who had negative thick smears (less than 1 parasite in 72 squares, 0.1 cubic millimeter) when examined twice daily for two to five consecutive days despite high fever and daily chills before parasites could be demonstrated. When parasites do appear they may be present in relatively small numbers, in contrast to a relapse, in which the smears are usually positive on the first examination and the parasite count is relatively much higher.

We appreciate the quandary of the physician faced with a patient who has been sick for several days with rising fever, vague complaints and little in the way of physical findings. The white blood cell count is usually low, and if the spleen is palpable one may think of typhoid or some other bacterial blood stream infection. The temptation to prescribe sulfonamides or penicillin is great, especially if the first few blood smears are negative for parasites, and we have seen patients with this type of onset who received large amounts of penicillin without benefit.

We suggest that unexplained fever in the returned serviceman should not be treated until a definite diagnosis has been established unless laboratory facilities are not available. Thick smears should be examined twice daily by a trained technician and continued for at least a week. In the meantime, other diagnostic studies can be carried out without compromising the patient's chances of recovery by waiting or withholding therapy. If malaria parasites are demonstrated, the disease has been correctly documented and this is important as a baseline for future recurrences of a similar nature. It must also be remembered that in a few individuals the delayed primary attack may occur as long as a year after suppressive medication has been discontinued. Nevertheless it is helpful in the management of cases of fever of unknown origin as described to know whether the patient has been in endemic malaria areas, when he stopped suppressive medication and whether he has had similar episodes previously controlled with antimalarial medication.

B. SIMULATED PRIMARY ABDOMINAL CONDITIONS

1. *Acute Episodes.*—Attacks of vivax malaria are frequently accompanied by gastrointestinal symptoms and signs of varying severity. Nausea, vomiting and abdominal pain and tenderness are common, usually follow the paroxysm and are rarely of such intensity as to confuse the diagnosis of malaria.

In a small number of patients, however, the abdominal symptoms and signs may precede the paroxysm by a day or two and be of such severity as to suggest a primary acute abdominal condition, particularly acute appendicitis, intestinal obstruction or acute cholecystitis. Unless one is aware of this possibility, needless surgery may be performed.

At this hospital alone we have seen 3 patients who could easily have undergone laparotomy because of severe abdominal signs and symptoms which preceded an attack of malaria by one or two days. Two of these patients were referred to the hospital for surgery from nearby military establishments with the diagnosis of acute appendicitis. The history was identical in the 2 and consisted of abdominal pain followed by nausea and vomiting and localization of the pain in the lower abdomen. There was diffuse tenderness but no rigidity. In 1 the white blood cell count was normal and in the other it was low. Both patients had a slightly elevated temperature. Malaria parasites (P. vivax) were discovered in the thin smear in 1 case while the differential count was being done, and in the other they were found in the thick drop. One patient had a typical chill and other characteristic symptoms of vivax malaria on the same day of admission and the other had his attack the day after he was admitted. Signs and symptoms related to the abdomen disappeared with specific antimalarial treatment. In contrast to the usual findings in acute appendicitis the abdominal pain in malaria is more diffuse, tenderness is present in both lower quadrants, muscular rigidity is absent and rectal examination is not localizing.

A third patient was under observation for two days because of intractable nausea, vomiting, abdominal pain and suspected intestinal obstruction. There was slight fever, the abdomen was diffusely tender and the white blood cell count was 23,000 per cubic millimeter. On the second day the patient volunteered the fact that he had had two previous episodes of severe abdominal pain and vomiting which were followed in from one to three days by an attack of malaria. Thick smears were examined and found to contain a moderate number of parasites (P. vivax). Treatment with parenteral quinacrine was begun. Fluids were given intravenously and nothing by mouth. Later in the day the patient had a typical paroxysm with a rise in temperature to 104.2 F. Quinacrine therapy was continued by the intramuscular route for the remainder of the day. On the following day vomiting had ceased, the temperature and white blood cell counts were normal and specific medication was continued orally. This patient, who was a member of our detachment, had a similar attack of severe abdominal pain, vomiting, leukocytosis and slight fever approximately four months later. At this time the first observed episode was recalled, smears were examined and found positive, and specific treatment was begun with quinacrine intramuscularly. Recovery was prompt and complete.

Gallbladder disease is most apt to be confusing in those cases in which there is slight enlargement and tenderness of the liver with minimal icterus from previous paroxysms. On the other hand, we have seen a patient whose gallbladder perforated while his right upper quadrant pain, nausea and vomiting were attributed to his malaria.

Apropos of simulated acute abdominal conditions due to malaria, it should be remembered that they occur more frequently and with greater severity in acute falciparum infections. We have seen laparotomy performed for suspected intestinal obstruction, cholecystitis and extrahepatic biliary obstruction in 3 cases. At autopsy in each case the primary cause of death was acute falciparum malaria! In these cases the acute abdominal findings overshadowed the possibility of malaria, but careful histories and repeated careful blood examinations could in all probability have established the correct diagnosis.

In a small number of patients an attack of malaria may be preceded by several days or ushered in with a period of brisk watery diarrhea. If fever and vomiting occur before the chill, one may suspect acute gastroenteritis. The smears are almost always positive and within a short time the typical chill, high fever and other symptoms will suggest the correct diagnosis. In many of these cases the symptoms accompany each relapse and a good history is extremely helpful.

2. *Signs and Symptoms of a Chronic Nature.*—Occasionally protracted low grade malarial activity in some individuals with good immunity may be manifested by slight to moderate anemia, slight icterus and enlargement of the liver and/or spleen. Inadequate treatment of frequently occurring mild attacks may also produce the same findings. Either there is no fever or, if present, it is low grade. Parasites are almost always present in the circulating blood, but their density may be very low. In such a combination of findings one may suspect some intrinsic disease of the liver, gallbladder or biliary system or some hematologic disorder rather than malaria. We have seen several such cases with a red blood count as low as 2.2 million per cubic millimeter and in each instance careful study of blood smears proved the underlying condition to be vivax infection. Specific therapy with antimalarial drugs produces a reticulocyte response, recession of the liver, disappearance of signs and symptoms and recovery from the anemia without iron or other drugs.

One of us (H. M.) has seen a Chinese patient with enlargement of the liver and spleen and reduction in all the formed elements of the blood in whom the diagnosis of Banti's syndrome led to splenectomy. Several weeks after recovery from the operation the patient complained of chills and fever. Examination of blood smears disclosed numerous quartan parasites (Plasmodium malariae) and review of preoperative filed blood smears likewise disclosed very rare parasites. While this condition may not occur often if at all in vivax malaria it is worth noting what the effect of protracted low grade malaria infection may be regardless of the species of parasite.

If the possibility is borne in mind that gastrointestinal symptoms and signs of varying intensity or chronicity may be related to underlying infection with P. vivax in some cases the correct diagnosis may be established and needless surgery avoided. It is not suggested that all acute or chronic gastrointestinal conditions occurring in patients who have had malaria are related to that disease. In fact, we have seen a moderate number of patients with a history of prior malaria suffering currently from chills, fever, abdominal or other signs and symptoms who were treated without benefit with antimalarial drugs on the assumption that the findings were due to malaria. Smears were negative and the white blood cell count elevated, which is exceptional in malaria. The conditions subsequently shown to be incorrectly diagnosed as malaria were, in their order of frequency, acute follicular tonsillitis, cellulitis, thrombophlebitis, pyelitis, pneumonia and cholecystitis.

A careful history particularly of previous similar episodes related to proved attacks of malaria, physical and laboratory examinations including careful search for malaria parasites and evaluation of all the findings possibly in conjunction with a surgeon when indicated should lead to a rational plan of management of the individual case.

C. CENTRAL NERVOUS SYSTEM MANIFESTATIONS

Signs or symptoms referable to the central nervous system in malaria occur most frequently in severe infections with Plasmodium falciparum. It is for this reason that there is a tendency to label all central nervous system manifestations occurring in malaria as "cerebral malaria," with the alarming implications and necessity for vigorous treatment which severe falciparum infections carry. The changes in the brain in falciparum infections consist of occlusion of small vessels with parasitized red cells, parasites, pigment and débris, multiple small discrete or ring shaped hemorrhages and other pathologic alterations. No such changes in the brain in vivax infections have ever been described to our knowledge. Furthermore, falciparum infections, if adequately treated or suppressed with quinacrine, rarely relapse. However, if central nervous system systems and signs occur at the onset of an attack of malaria and there is any question about the history or species of parasite observed or if no history can be obtained, the safest procedure to follow is the institution of vigorous parenteral antimalarial therapy until it can be decided whether or not the infection is due to P. falciparum.

We have seen definite and severe symptoms and signs referable to the central nervous system at the onset of attacks of vivax malaria which are worthy of note. Severe headache is common but is not alarming, and symptomatic treatment suffices. Delirium is seen in some patients and is probably an expression of hyperpyrexia in individuals sensitive to high fever. Antipyretics, sponging, parenteral fluids and ice caps to the head usually are effective in controlling this symptom. Acute psychoses may occur during treatment and represent a rare manifestation of quinacrine toxicity unrelated to malaria itself. Severe stiffness of the neck preceding or accompanied by fever and a chill at the onset of an acute attack of vivax malaria may be suggestive of meningitis which must be excluded. The spinal fluid is normal, the white blood cell count tends to be low and the blood smears contain parasites (P. vivax).

Convulsions at the onset of an attack of vivax malaria may be alarming but fortunately occur rarely. We have seen only 3 examples of convulsions in proved cases of vivax malaria in the course of treating several thousand attacks. Brief reference will be made to these cases:

CASE 1.—A man seen shortly after a generalized convulsion was perfectly oriented and stated that he had had convulsions during several previous severe attacks of malaria. These were

documented in his medical record, and his transfer diagnosis was "recurrent cerebral malaria." No record of the species of parasite for these previous attacks was available. On the day of the current convulsion the patient had a severe paroxysm. Numerous asexual forms of P. vivax were present in the blood smears. The temperature rose quickly to 104 F., but the patient was fairly comfortable. However, within another half hour the temperature had risen to 105.8 F., shortly after which he had the convulsion. Salt and glucose were administered intravenously immediately afterward as well as 1 Gm. of acetylsalicylic acid by mouth. The patient was sponged with cold water and the naked body cooled with two electric fans. The temperature fell quickly and no further difficulty was experienced. In an attempt to prevent a paroxysm the following day, 1 Gm. of quinacrine was given intramuscularly in divided doses on the first day. There was no subsequent fever and the patient received 1.8 Gm. of quinacrine by mouth during the next six days, after which he continued to receive 0.1 Gm. daily for five months. The spinal fluid, neurologic examination, x-rays of the skull and electroencephalogram were normal. On questioning the patient we learned that he had had convulsions during childhood with measles and during early boyhood with scarlet fever and not again until he had his first attack of malaria many years later. In our opinion, convulsions during an attack of vivax malaria in this patient represent a central nervous system reaction to hyperpyrexia.

CASE 2.—This man likewise was returned from overseas with a diagnosis of "cerebral malaria" because of a severe convulsion during an attack of malaria. The species of parasite had not been identified. While under observation in a malaria study group he complained of severe headache and "spasm" of the right hand. X-rays of the skull, neurologic examination and the spinal fluid at an overseas hospital were normal. The patient stated that he had sustained a severe head injury followed by a short period of unconsciousness and subsequently developed constant headache, which he attributed to the head injury. Shortly after arrival in this country and while in the hospital for study he had a severe epileptiform convulsion starting on the right side and quickly becoming generalized. The patient shrieked at the onset, bit his tongue and was incontinent of urine. The convulsion subsided and the patient remained drowsy for about ten minutes, after which he was confused for another twenty minutes. In the meantime, blood smears were examined and reported as containing numerous malaria parasites (P. vivax). The rectal temperature was 102.8 F. Antimalarial and anticonvulsant drugs (diphenylhydantoin [dilantin] sodium and phenobarbital) were administered simultaneously by mouth. On the second day the patient was afebrile and complained only of a severe headache. There was amnesia for the details of the recent convulsion and slight weakness of the right hand; otherwise complete neurologic examination was negative. The spinal fluid was normal in all respects. At the end of a week antimalarial drugs were discontinued. In the meantime it was learned from another patient that the boy who had the convulsion had been observed in the midst of several convulsions outside the hospital. When we confronted our patient with this information he admitted having had convulsions but said that he was reluctant to report them for fear of being branded epileptic or submitted to cranial surgery. Electroencephalograms showed a localized area of abnormal excitability, but air visualization of the ventricular system was normal. The neurologist and neurosurgeon did not believe that surgery was indicated and classified the disease as a post-traumatic convulsive disorder ("postconcussive encephalopathy with focal area of degeneration, left cerebrum, central area"), recommending that anticonvulsant drugs be continued indefinitely. Two months later the patient, while still on anticonvulsant drugs, experienced a severe attack of malaria with a hard chill and high fever without developing any signs or symptoms related to the brain other than severe headache. We believe there is good evidence in this case that the convulsions which occurred during acute attacks of vivax malaria were due to underlying disease of the brain and that the fever or some other factor in the malaria attack acted as a trigger to set off the seizure. The patient was then kept on quinacrine suppression and anticonvulsant drugs without subsequent malaria or convulsive seizures.

CASE 3.—A white man aged 24 was returned from the Southwest Pacific area with a transfer diagnosis of "psychosis, unclassified, severe, manifested by agitation, blocking of thought and auditory hallucinations." His malaria history overseas disclosed that he had four attacks of malaria while in New Guinea and that during the last two he had convulsions and subsequently developed behavior changes for which he was returned to the United States. The only features in the past history which are relevant are the facts that he had criminal tendencies, spending short periods of time in a state reformatory or under parole, that he was poorly adjusted socially and that infrequently he had vague "spells" which could possibly have been "petit mal." It also seems probable from a review of his overseas record that his first serious attack of malaria during which he was in coma and had convulsions was due to infection with P. falciparum. Examination in this country failed to show evidence of any psychosis. Neurologic examination was negative. The spinal fluid on several occasions showed slight elevation in protein. Two electroencephalograms were considered abnormal and were "suggestive of epilepsy or some related disorder." While under observation at another hospital in this country he had one episode related to a vivax relapse during which there were symptoms and signs referable to the nervous system. These consisted of sudden onset of stuporousness and signs of minimal bulbar palsy characterized by nasal regurgitation, drooling and continual clearing of the throat because of impaired pharyngeal reflex. A prior attack of supposed falciparum malaria treated early at the same hospital was not accompanied by signs or symptoms related to the nervous system.

While the patient was under observation at this hospital smears were examined repeatedly and no suppressive medication was given. On Aug. 27, 1945 the patient had a positive smear for P. vivax but had no fever or symptoms. The following day, while lying on his bed trying to have a nap, he had a generalized convulsion. He was seen at once and found unconscious, frothing at the mouth and breathing rapidly for a short time followed by a longer period of apnea. The head was retracted to the left; otherwise the neurologic examination was negative. The rectal temperature was 102.2 F. Following recovery from the convulsion, 0.8 Gm. of quinacrine was given intramuscularly in divided doses and glucose in saline solution by vein. The patient remained confused the greater part of the day, but on the following day he had completely recovered except for not remembering the details of the previous day's attack. A total of 2.8 Gm. of quinacrine was given to terminate the recent vivax relapse.

It is difficult to correlate the patient's central nervous system symptoms solely on the basis of vivax malaria. It seems to us that he may well have had changes in the brain in a general way related to convulsive disorders (epilepsy) prior to his first attack of malaria. Secondly, that the initial attack of severe falciparum malaria overseas either aggravated the underlying condition or in itself induced some permanent changes in the brain. Subsequently vivax relapses resulted in the central nervous system signs and symptoms described, which were due to underlying disease of the brain caused or aggravated by prior falciparum malaria with cerebral localization.

The immediate diagnosis in patients with central nervous system signs and symptoms related to an attack of malaria may be difficult. We believe that central nervous system findings in the presence of a late relapse of malaria are probably associated with vivax infection but that the nervous system manifestations are due to underlying disease of the brain such as may be found in epilepsy, following head injury or in rare cases following prior severe falciparum infections with cerebral localization. Regardless of the species of parasite

responsible for the current attack, the management is the same; namely, prompt and vigorous antimalarial therapy parenterally. However, the subsequent treatment of these cases poses a more serious problem. Should one continue suppressive medication indefinitely? Careful studies should be instituted to determine whether there is an underlying pathologic condition in the brain. Anticonvulsant drugs should be continued in those individuals who suffer from convulsive disorders until the malaria infection has run its whole course or has otherwise been eradicated by treatment.

D. ALLERGIC MANIFESTATIONS

Writers from the tropics have in the past referred to "malaria sensitization and malaria asthma." We have not seen asthma which could definitely be attributed to malaria. But we have seen 12 patients with urticaria of varying severity which preceded or accompanied an acute attack of vivax malaria, and these are worthy of note in a general way. The first patient reported to his ward officer because of severe generalized urticaria. The latter prescribed symptomatic treatment and arranged for an allergy consultation. When the allergist phoned on the following day to inquire where the patient was, it was learned that he was in bed with an acute attack of vivax malaria. No serious thought was given to a relation of these events. However, soon afterward another patient was seen with urticaria and on the basis of the first case smears were done and found positive for P. vivax. No treatment was given and later in the day the patient had a paroxysm. Subsequently 10 additional patients were observed who had urticaria for one or two days prior to an attack of malaria or on the day of the attack before drugs were given. In some patients the urticaria was very severe, involving the eyes and face, and in 1 patient probably the larynx was involved. These patients had no other allergic history, and a few who were carefully skin tested were found negative to dusts, pollens, common foods or other antigens.

We presume that these patients have been sensitized by the plasmodia or their products and that, when the former are present in sufficient number to exceed the amount of antibody present, urticaria or some other allergic manifestation follows. The fact that urticaria may precede attacks of vivax malaria is useful, and if blood smears are examined the diagnosis can be made early and time consuming allergy studies dispensed with.

E. MISCELLANEOUS

1. *Respiratory Symptoms.*—Upper respiratory symptoms, especially during winter months, are common in vivax malaria. Likewise, chest pain and rales are not uncommon during an attack. These findings in a patient with a chill and a high fever may suggest pneumonia. The chest x-ray is negative and smears will contain parasites, establishing the diagnosis of vivax malaria. These two diseases are not often confused, but we have seen treatment of pneumonia delayed because it was assumed that the patient had malaria, and conversely we have seen suspected pneumonia treated without effect because the patient actually had malaria. In malaria the elevation of temperature is not sustained beyond a few hours after the chill, and the accompanying symptoms, negative x-ray and positive blood smear for parasites should make the diagnosis simple if both diseases are considered.

We have seen 1 patient with sharp chest pain during an attack of vivax malaria which was due to a spontaneous pneumothorax produced during the chill. This is a very unusual occurrence.

2. *Rupture of the Spleen.*—This serious complication is a very rare occurrence during an attack of malaria and is mentioned only in passing. The symptoms and signs are so dramatic and the abdominal findings such that the diagnosis is usually made. Immediate surgery is indicated, following which the attack of malaria can be controlled with parenteral medication.

3. *Chills and Fever After Injuries or Operations.*—It is well known that trauma, general anesthesia or surgery may induce a relapse of vivax malaria. However, this may occur years after cessation of all malaria activity and the disease forgotten. If this is borne in mind and blood smears are examined for malaria parasites, needless worry about postoperative infection or embolization can be avoided.

4. *Chills and Fever or Jaundice After Transfusions.*—Patients who are receiving repeated transfusions of fresh whole blood for an acute or chronic disease may develop jaundice, anemia or chills and fever. This may be due to activity from transfused vivax parasites rather than infectious hepatitis or hemolytic, Rh or pyrogenic reactions. The latter certainly are more common than transfusion malaria, but this possibility must not be overlooked and smears should be examined for parasites.

COMMENT AND CONCLUSIONS

We have described our experience with the relatively uncommon, though not rare, clinical manifestations of vivax malaria with the thought that appreciation of these findings may lead to a more rational approach in the management of acute or chronic problems in the patient who has had or may have vivax malaria.

1. Fevers of unknown origin in the returned serviceman who has not had malaria before because of effective suppression which has now been discontinued for some time may be due to the onset of the first or "delayed primary" attack of malaria. There may be gradually rising fever or high fever with or without chills for several days, during which time smears may be negative. Patience and carefully studied smears made repeatedly will be rewarded in many cases by a diagnosis of vivax malaria. Useless treatment with penicillin or sulfonamides will be avoided and the disease accurately documented for future reference. Therapeutic trials with antimalarial drugs are not advised if laboratory facilities are available.

2. Acute or chronic symptoms or signs suggesting a primary disease related to the abdominal contents may be present prior to or at the onset of an acute attack of vivax malaria or may be the result of a continuing low grade vivax infection. Before surgery is performed, blood smears should be examined carefully to exclude the possibility of active vivax malaria. A history of similar episodes related to proved attacks of malaria is extremely helpful. The most common findings which may be confusing are severe nausea, vomiting, abdominal pain and tenderness, diarrhea, fever, slight jaundice and anemia, and enlargement of the liver and spleen. The white blood cell count is rarely elevated, smears usually contain parasites (P. vivax). Initial treatment when the correct diagnosis has been made consists in giving antimalarial drugs parenterally when severe vomiting exists and the administration of fluids containing salt and glucose intravenously. Subsequent treatment can be given by mouth until the required total amount of drug has been given.

3. Convulsions may occur with attacks of vivax malaria. These may occur as a reaction to hyperpyrexia or in patients with underlying brain disease. Preexisting epilepsy, head injury and falciparum malaria must be excluded. Treatment of the convulsion is symptomatic, and the current attack of malaria is terminated by vigorous dosage of antimalarial drugs parenterally until fever and parasitemia have been controlled. Attempts should be made in exact species identification of the parasite. Acute psychoses occur rarely and are an expression of quinacrine toxicity. Meningitis may be simulated by a stiff neck and fever, but a normal spinal fluid, low or normal white count, the typical paroxysm and positive blood smear for malaria parasites establish the correct diagnosis.

4. Urticaria or severe angioneurotic edema may precede or accompany acute attacks of vivax malaria. A history of such correlated episodes and examination of blood smears will dispense with time consuming allergy studies in these cases.

5. Chest pain, rales, fever and chill occurring with an acute attack of vivax malaria in the winter months may be confused with pneumonia. History, white count, malaria smears and chest x-ray are helpful in differentiation.

6. Miscellaneous manifestations of vivax infection, as rupture of the spleen, pneumothorax following the paroxysm and corneal herpes, are rare and are mentioned in passing. Chills and fever following trauma or surgery may be due to a vivax relapse long after the disease has ceased to be active. Consideration of this occurrence will dispel worry over postoperative infection or embolization. Chills and fever or jaundice in patients who are receiving transfusions repeatedly may be due to transfused vivax parasites and may simulate hemolytic, Rh and pyrogenic reactions or infectious hepatitis.

7. Not all acute or chronic conditions or chills and fever which occur in patients who have had or may have vivax malaria are due to the latter. Such an assumption will lead to failure or delay in recognition and proper treatment of such common conditions as acute follicular tonsillitis, thrombophlebitis, cholecystitis, pyelitis or pneumonia.

8. Acute manifestations of vivax infection can be controlled by the administration of 2.8 Gm. of quinacrine during seven days. Of this total, 1 Gm. is given on the first day in divided doses either by mouth or intramuscularly if severe vomiting or central nervous system symptoms preclude oral medication. Intravenous salt and glucose are helpful in controlling fluid and salt loss and symptoms in vomiting and hyperpyrexia. Antipyretics, intravenous fluids and artificial cooling of the body are useful in reducing abnormally high fever during an attack.

Psychiatric Problems in the Air Forces.—The relation of air sickness to anxiety is interesting in that those who suffer from this malady usually have a good deal of conscious or unconscious anxiety about riding in an airplane. Provided no disease has developed in the internal ear, air sickness in flying personnel not previously afflicted is usually psychogenic and represents an unusual conversion symptom. Yet in civilian life patients during psychoanalytic treatments experience sensations similar to air sickness as symptoms of overwhelming anxiety liberated by the psychic probing.—Grinker, Roy R., and Spiegel, John P.: War Neuroses, Philadelphia, Blakiston Company, 1945.

STREPTOMYCIN RESISTANCE OF GONOCOCCI AND MENINGOCOCCI

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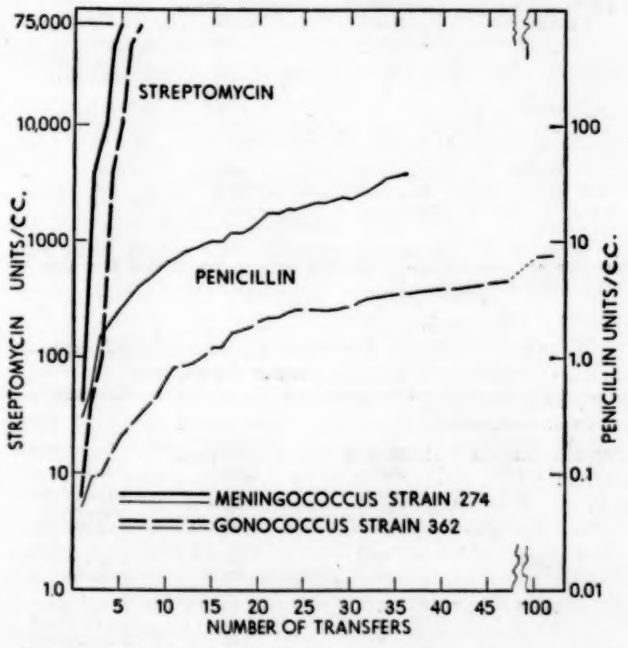
Drug resistance or "fastness," that is the acquisition by micro-organisms of tolerance for chemotherapeutic agents, has long engaged the attention of bacteriologists and parasitologists [1] and has recently become a matter of concern among clinicians and epidemiologists. Resistant strains of micro-organisms usually susceptible to the sulfonamides have been recognized for some time, and penicillin resistant strains are now beginning to appear in clinic and laboratory. The apprehension which might have been caused by the latter is currently being allayed by the introduction of streptomycin.

Experiments which we [2] have recently completed have demonstrated that meningococci and gonococci acquire resistance to penicillin during cultivation on mediums



Comparison of rates of increase in streptomycin resistance and penicillin resistance by gonococcus and meningococcus.

containing penicillin, provided its concentration is increased carefully at each transfer and kept below the level which inhibits active multiplication of the micro-organisms. By observing these precautions, the penicillin tolerance of a strain of gonococcus has been raised to a degree which allows it to grow on mediums containing 21 units of penicillin per cubic centimeter, a 350-fold increase over the initial tolerated concentration. In similar fashion a strain of meningococcus has acquired tolerance for 41 units per cubic centimeter, or 136 times the concentration of penicillin which originally permitted growth. These rates of increase are shown graphically in the accompanying chart.

Moreover, the virulence of these penicillin resistant meningococci was retained during a large part of the rise, up to a level of 18 units per cubic centimeter.

From the Department of Medicine and the A. B. Kuppenheimer Foundation of the University of Chicago.

1. For an early discussion of acquired resistance see Dale, H. H.: Chemotherapy, Physiol. Rev. **3**: 359, 1923.

2. Miller, C. P., and Bohnhoff, Marjorie: Studies on the Action of Penicillin: IV. The Development of Penicillin Resistance by Gonococcus, Proc. Soc. Exper. Biol. & Med. **60**: 354, 1945; V. The Virulence of Penicillin Resistant Strains of Meningococcus, ibid. **60**: 356, 1945.

an attack of vivax malaria which was due to a spon- amount of drug has been given.

Meningococcic infections experimentally produced in mice with these resistant strains required very large doses of penicillin for their control.

The susceptibility of these penicillin resistant strains to streptomycin and the possibility of the development of streptomycin resistance by freshly isolated strains of meningococci and gonococci prompted the investigation here reported.

EXPERIMENTAL

Susceptibility of Gonococci and Meningococci to Streptomycin.—The initial susceptibility of six strains of gonococcus and ninety-six strains of meningococcus were tested for their streptomycin tolerance by inoculating each strain onto a series of blood agar [3] plates containing graded concentrations of streptomycin.[4] The

TABLE 1.—*Streptomycin Treatment of Mice Infected with Streptomycin Resistant Meningococci*

In Vitro: Resistance of Meningococci for Streptomycin, Units per Cc.	Number of Mice	Total Dose of Streptomycin * Administered, Units	Results
40	12	50	All died
	18	70	All but 2 survived
	26	100	All survived
10,000	8	9,000†	All died
	8	10,000	All died
	8	15,000†	All died
75,000	8	9,000†	All died
	8	10,000	All died
	8	15,000†	All died

* Given in two subcutaneous injections three and six hours after inoculation; those marked + received three injections two, four and six hours after inoculation.

TABLE 2.—*Penicillin Treatment of Mice Infected with Streptomycin Resistant Meningococci*

In Vitro: Resistance of Meningococci for Streptomycin, Units per Cc.	Number of Mice	Total Dose of Penicillin * Administered, Units	Results
40	10	10	All but 2 died
	16	20	11 survived
	28	40	All survived
10,000	8	20	4 survived
	8	60	6 survived
75,000	16	20	12 survived
	8	60	All survived
	8	80	All survived

* Given in two subcutaneous injections three and six hours after inoculation.

highest concentration on which any colonies developed in forty-eight hours was considered the limit of tolerance for that strain.

For the six strains of gonococcus, the streptomycin tolerance varied from 8 to 40 units per cubic centimeter. For the ninety-six strains of meningococcus, it varied from 1 to 40 units per cubic centimeter.[5] All of the strains tested could therefore be classified as susceptible to streptomycin in their original state.

Method of Developing Streptomycin Resistance.—The micro-organisms were grown on freshly prepared blood agar plates containing known concentrations of streptomycin. Each transfer was made onto several plates containing different concentrations of streptomycin to insure abundant growth on at least one. Inoculated plates were placed in a metal box containing a lighted candle and incubated for twenty-four hours, after which they were examined and described. Transfer to the next set of plates was made from the medium which contained the highest concentration of streptomycin permitting growth. Plates which showed no growth at the end of twenty-four hours were returned to the incubator and examined again the following day.

The first few trials showed that both gonococci and meningococci acquire resistance to streptomycin much more rapidly than they do to penicillin.

The rates of increase for a strain of each are presented graphically in the chart, which plots the highest concentration of streptomycin permitting growth in each successive subculture.

All of four strains of gonococcus and nine of meningococcus acquired streptomycin resistance at approximately the same rate; i. e., four to six daily transfers sufficed to raise their resistance to a level which enabled them to grow on mediums containing 75,000 units of streptomycin per cubic centimeter, the highest concentration which was practicable with the supply available.

In contrast with the very rapid rise in streptomycin resistance, penicillin resistance was developed by the same strains at a much slower rate, as shown in the chart.

MORPHOLOGIC APPEARANCE OF STREPTOMYCIN RESISTANT STRAINS

The macroscopic appearance and physical characteristics of colonies as well as the morphology of the individual cells of streptomycin resistant gonococci and meningococci showed none of the changes observed in penicillin resistant strains.

DURATION OF STREPTOMYCIN RESISTANCE

It is too soon to make any statement about the permanence of streptomycin resistance. At present we can only state that it has persisted for three and one-half months.

EFFECT OF STREPTOMYCIN RESISTANCE ON THE VIRULENCE OF MENINGOCOCCI

All of the animal experiments in this study were made with meningococci because they lent themselves more easily to the purpose.

Method of Determining Virulence.—Virulence of meningococci was determined by infecting mice with varying numbers of meningococci suspended in mucin, according to the method of Miller and Castles.[6] By this means less than 10 meningococci of maximal virulence are required to initiate a lethal infection.

The virulence of each strain was determined before and several times during the course of its development of streptomycin resistance. In no instance was there any loss of virulence, and one strain actually increased in virulence to an appreciable degree as it became streptomycin fast.

Determination of the Therapeutic Action of Streptomycin on Experimental Meningococcic Infection.—Mice were infected with standard inoculums of approximately 100,000 minimum lethal doses by the intraperitoneal inoculation of meningococci suspended in mucin and were treated by subcutaneous injection of 0.5 cc. of streptomycin in saline solution three and six hours or two, four and six hours after inoculation. A represen-

3. The basic ingredient of the agar was a tryptic digest of casein to which 0.065 per cent of cystine was added. Directions for its preparation are given in Miller, Moeller and Bohnhoff (A Method for Production of a Localized Gonococcal Infection in the Rabbit's Eye, Proc. Soc. Exper. Biol. & Med. **58**: 143, 1945). One-tenth volume of rabbit blood and the appropriate quantity of streptomycin were added at the time the plates were poured and thoroughly mixed before hardening.

4. Dr. J. M. Carlisle of Merck and Company, Inc., Rahway, N. J., supplied the streptomycin used in these experiments.

5. It should be remembered that streptomycin units and penicillin units bear no direct relation to each other.

6. Miller, C. P., and Castles, Ruth: Experimental Meningococcal Infection in the Mouse, J. Infect. Dis. **58**: 263, 1936.

tative number of the mice dying in each experiment were examined post mortem. Cultures were made of the heart's blood to be sure that death was due to meningococcic sepsis. As will be seen in table 1, infections initiated with 100,000 minimum lethal doses of meningococcus normally susceptible to streptomycin were regularly brought under control by two subcutaneous injections of 50 units of streptomycin, a total of 100 units.

After the strain had acquired streptomycin resistance in vitro, mice were infected with similar inoculums and treated with streptomycin in the same way. All of these animals succumbed to meningococcic sepsis (proved by cultures of heart's blood) in spite of treatment with streptomycin in doses up to a total of 15,000 units, the largest amount which could be administered without serious symptoms of drug toxicity.

The inability of streptomycin to control infection with streptomycin resistant meningococci was even more strikingly illustrated by the following experiment: Mice were infected with small numbers of streptomycin resistant meningococci (10 to 100 or approximately 10 minimal lethal doses). They were then treated with 15,000 units of streptomycin in three doses. One half of them died, and cultures of heart's blood of all mice examined post mortem were positive for meningococci. This finding confirmed the conclusion drawn from the preceding experiments that meningococci which had acquired streptomycin resistance in vitro were able to produce a fatal sepsis in animals despite treatment by relatively enormous doses of streptomycin.

PENICILLIN TREATMENT OF INFECTIONS WITH STREPTOMYCIN RESISTANT MENINGOCOCCI

The susceptibility of streptomycin resistant gonococci and meningococci to penicillin in vitro suggested the determination of their susceptibility in vivo. Meningococcus was chosen for the experiments because it was better suited to the purpose. Three subcultures of the strain already described were used: one before it had developed any resistance to streptomycin above its initial level of 40 units, and one each after it had acquired resistance to 10,000 and 75,000 units of streptomycin, respectively. Each subculture was used to infect a group of mice, which were then treated with graded doses of penicillin. As will be seen in table 2, very little more penicillin was needed to cure all of the infections in the second and third groups than was required for those in the first group.

When these results are compared with those in table 1, it is obvious that infections with streptomycin fast meningococci which resist treatment with maximum doses of streptomycin yield to small doses of penicillin. In other words, streptomycin resistant meningococci are about as susceptible to penicillin in vivo as they are in vitro.

STREPTOMYCIN SUSCEPTIBILITY OF PENICILLIN RESISTANT GONOCOCCI AND MENINGOCOCCI IN VITRO

Strains of gonococci and meningococci were tested for their streptomycin tolerance in vitro before and after they had become resistant to high concentrations of penicillin. All were found to be at least as susceptible to streptomycin, and one strain of gonococcus became somewhat more susceptible to streptomycin after it had acquired resistance to penicillin than it had been originally.[7]

STREPTOMYCIN TREATMENT OF PENICILLIN RESISTANT INFECTIONS

Mice were infected with meningococci which had been rendered resistant to 10 and 14 units of penicillin per cubic centimeter, and some were treated with penicillin and some with streptomycin. For comparison mice were also infected with cultures of the same strain before it had become penicillin resistant. As will be seen in table 3, very large doses of penicillin were required to cure these infections, showing that the micro-organisms were highly resistant to the action of the drug in vivo as well as in vitro. Nevertheless, these penicillin resistant infections responded favorably to practically the same doses of streptomycin as did infections with nonresistant meningococci.

TABLE 3.—*Comparison of Penicillin and Streptomycin Treatment of Mice Infected with Penicillin Resistant Meningococci*

In Vitro: Resistance of Meningococci for Penicillin, Units per Cc.	Mice Treated with Penicillin			Mice Treated with Streptomycin		
	Number of Mice	Total Dose Administered,* Units	Result	Number of Mice	Total Dose Administered,* Units	Result
0.3	10	10	All but 2 died	12	50	All died
	16	20	11 survived	18	70	All but 2 survived
	28	40	All survived	26	100	All survived
10	24	400	All but 7 died	6	50	All survived
	8	500	4 died	12	70	All survived
	8	600	7 survived	6	100	All survived
14	16	400	All died	12	70	8 survived
	8	500	1 died	12	100	All but 1 survived
	16	600	All survived	6	150	All survived

* Given in two subcutaneous injections three and six hours after inoculation.

COMMENT

The initial tolerance of a number of strains of gonococcus and meningococcus for streptomycin was found to vary within very narrow limits, indicating that none of these strains was naturally resistant to the drug. The strains of gonococcus were mostly freshly isolated strains. Those of meningococcus (ninety-six in all) included some recently isolated, many stored in the frozen state since isolation and a few kept under cultivation for months on artificial mediums.

Repeated subcultivation on streptomycin agar induced streptomycin resistance of both gonococci and meningococci at a very rapid rate, so rapid, in fact, that all of the strains subjected to this treatment required only four to six daily transfers to mediums containing increasing concentrations of the drug to permit them to grow abundantly on mediums containing 75,000 units of streptomycin per cubic centimeter, the maximum concentration which could conveniently be employed with the supply at our disposal. This technical limitation prevented the determination of the ultimate limits

7. Unpublished experiments.

of streptomycin resistance, a point of considerable importance because it would answer the engaging question whether or not micro-organisms can become completely and absolutely streptomycin fast.

The rate of enhancement of streptomycin resistance becomes even more remarkable when it is compared with that of penicillin resistance on the same strains of gonococci and meningococci by the same methods. The latter proceeded at a much slower pace and never reached levels suggesting the possibility of absolute fastness.

In vitro resistance to streptomycin was confirmed by in vivo experiments which showed that infections with streptomycin resistant strains of meningococci could not be controlled by the largest doses of streptomycin tolerated by the animals, doses which would be equivalent on a weight for weight basis to about 55,000,000 units for a 70 kilogram man.

These streptomycin resistant meningococci were quite susceptible to penicillin in vitro, and infections produced with them were controlled by doses of penicillin equal to or only slightly greater than those required by non-resistant meningococci.

Conversely, penicillin resistant meningococci were normally suceptible to streptomycin on artificial mediums and in the infected animal.

In other words, meningococci resistant to either drug were found to be susceptible to the other in vitro and in vivo. The same correlation was observed in vitro with gonococci.

These observations suggest that streptomycin and penicillin act on these micro-organisms in quite different ways. This conclusion is supported by three other differences in the behavior of gonococci and meningococci toward streptomycin and penicillin: (*a*) the more rapid acquisition of streptomycin resistance, (*b*) the absence in streptomycin resistant gonococci and meningococci of the gross physical change and abnormal microscopic appearance of penicillin resistant micro-organisms and (*c*) the retention or even enhancement of virulence of meningococci after acquiring streptomycin resistance, whereas the development of penicillin resistance tends to lower their virulence somewhat.

It should be pointed out that the observations here described have been made on micro-organisms which have been rendered drug resistant by artificial means and that these findings must not be assumed to apply by analogy to naturally resistant strains if and when they arise. The relation of artificially acquired and naturally acquired resistance to chemotherapeutic agents involves many questions as yet unanswered.

SUMMARY

Streptomycin resistance of gonococci and meningococci was determined by inoculating series of blood agar plates containing graded concentrations of streptomycin and noting the highest concentration which permitted the development of any colonies in forty-eight hours. The original or native streptomycin resistance of six strains of gonococcus was found to be between 8 and 40 units per cubic centimeter and of ninety-six strains of meningococcus 1 to 40 units per cubic centimeter.

Repeated cultivation of gonococci and meningococci on mediums containing increasing concentrations of streptomycin enhanced their streptomycin resistance rapidly —within four to six transfers—to such a degree that growth occurred on concentrations of 75,000 units per cubic centimeter, the highest concentration employed. These streptomycin resistant meningococci remained fully virulent for mice and produced lethal infections with generalized sepsis in spite of treatment with 15,000 units of streptomycin, the maximum dosage tolerated by the animals. Similar infections with the same strains before they had become resistant were regularly cured by doses of 70 to 100 units of streptomycin.

Streptomycin resistant meningococci were susceptible in vitro and in vivo to penicillin, and penicillin resistant meningococci were susceptible to streptomycin in vitro and in vivo.

Gonococci resistant to either drug were susceptible to the other in vitro.

Streptomycin resistant micro-organisms did not show the gross and microscopic abnormalities observed in penicillin resistant strains.

It must be concluded that the mode of action of streptomycin on these micro-organisms differs from that of penicillin.

RHEUMATIC FEVER ON THE ISTHMUS OF PANAMA

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Medical literature leads one to believe that rheumatic fever is an uncommon disease in the tropics. It suggests also that when the disease does occur it is mild and cardiac damage is slight. Manson-Bahr [1] states that "as rheumatic fever is a rare disease in the tropics, rheumatic affections of the valves of the heart are correspondingly rare." J. T. Clarke [2] stated that rheumatic fever is practically unknown at sea level in tropical areas. W. T. James [1] has been quoted by Manson-Bahr as stating that he had not seen a case of rheumatic fever in twenty-four years of practice in Panama. Goetz [3] found rheumatic heart lesions in 3 autopsies on native Panamanians. He also reported 3 cases of chorea and 5 cases of rheumatic fever among 11,000 admissions to Santo Tomas Hospital in Panama City. Chanis [4] gave an excellent description of rheumatic lesions found in 12 native Panamanian patients who died in Santo Tomas Hospital. Acute lesions caused by rheumatic fever accounted for 5 deaths, and cardiac failure resulting from healed rheumatic valvulitis caused death in the remaining 7 patients.

SOURCE OF MATERIAL

The number of cases of active rheumatic fever in Gorgas Hospital prompted this review of the clinical and postmortem records of the hospital. The records were studied separately by each of us and after complete agreement the cases were classified. Only patients having either typical cardiac or joint involvement were included. Those in whom the findings were not clearcut or adequately described, but in whom the diagnosis of rheumatic fever seemed probable, were considered as "possible" cases. If further doubt existed, they were not included in this report.

From the Medical and Pediatric Services of Gorgas Hospital, Aucon, Panama Canal Zone.

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ANALYSIS OF CASES

Prior to 1930, only 8 cases meeting the aforementioned requirements were found in 8,905 autopsy records of the Board of Health Laboratory. Five were classified as acute and active rheumatic fever, and the other 3 were found to be healed rheumatic lesions.

The earliest record was that of a Spaniard who died in 1908 at the age of 50 years after a residence of only eight months on the Isthmus. Autopsy revealed a healed mitral lesion. The next patient was a Negro aged 44 who died in January 1919 of active rheumatic fever after living ten years on the Isthmus. He was originally from the French West Indies. The 4 other patients with active rheumatic fever were born and had always lived on the Isthmus. Only 1 of the patients with inactive rheumatic fever was born here.

Fourteen cases of well defined active rheumatic fever were found among 310,718 clinical records of the hospital between 1904 and 1930. Seven of the patients were of British West Indian parentage, 3 were Panamanian and 3 were born in the United States. One other was a transient Danish seaman. Eight of the 14 had been born and had always lived on the Isthmus. The earliest well defined case in this group was noted in 1910. The patient was a boy aged 12 years, born in the United States, who had lived on the Isthmus four years. An additional 14 cases resembling rheumatic fever were found during this period (table 1).

There were 228,748 admissions to Gorgas Hospital during the fourteen years that began Jan. 1, 1930 and ended Dec. 31, 1943. The hospital charts reviewed for these years showed a decided increase in the incidence of rheumatic fever. It is with this period that the statistics given here deal. Autopsy records of the Board of Health Laboratory were also studied for the same period. Since 1940 all patients have been seen by one or more of us.

A. *Active Rheumatic Fever.*—Since 1930, 80 persons were considered to have definite acute and active rheumatic fever. Twenty of this group died while in the hospital. All of the deaths were due to acute rheumatic carditis. Seventy-six of the 80 patients had definite rheumatic cardiac involvement. Two others were considered clinically to have possible cardiac involvement, but the remaining 2 had no diagnostic signs of heart damage. Fourteen of the 20 who died and in whom autopsies were performed had acute pancarditis.

Sixty-five of these 80 patients were born and had always lived on the Isthmus. Ten of the remaining 15 were born in the United States, 4 in the West Indies and 1 in Colombia. Forty-six were of West Indian parentage, 21 were Panamanians and 12 were born of white parents from the United States (table 2).

Nineteen of the 20 patients who died were born on the Isthmus. These included 12 West Indians, 5 Panamanians and 2 whose parents were born in the United States. The other one was born in Jamaica but had lived here for twenty years.

Only 5 of the 80 patients were under 5 years of age when first admitted to the hospital with rheumatic fever. Thirty-two were in the age group of 5 to 10 years, 17 were 11 to 15, 13 were between 16 and 20 and 13 were over 20. Fourteen of the deaths occurred between the ages of 5 and 10 years. Four of the 5 who were less than 5 years old died. Thus 18 of the 20 deaths from the disease occurred under 11 years of age (table 3).

Females slightly outnumbered the males, there being 43 females and 37 males. Ten females and 10 males died as the result of acute attacks of rheumatic fever.

There were 109 hospital admissions for rheumatic fever among these 80 patients, an average of 1.36 admissions per individual.

B. *Possible Active Rheumatic Fever.*—Thirty-four patients with possible acute rheumatic fever were studied (tables 2 and 3). Of these, 22 were born and had always lived on the Isthmus. There were 17 West Indians, 4 Panamanians and 1 of white United States

TABLE 1.—*Analysis of the Incidence of Rheumatic Fever in 310,718 Hospital Admissions Between Jan. 1, 1904 and Dec. 31, 1930*

	Number of Cases	Died	Post-mortem	Birthplace: West Indies	Panama	United States	Elsewhere	Parentage: West Indian	Panamanian	United States	Other
Acute rheumatic fever	19	5	5	3	12	3	1	10	5	3	1
Possible rheumatic fever	14	0	0	4	2	4	4	4	2	4	4
Healed lesions	3	3	3	0	1	1	1	1	0	1	1
Total	36	8	8	7	15	8	6	15	7	8	6

TABLE 2.—*Analysis of the Incidence of Rheumatic Fever in 228,748 Hospital Admissions Between Jan. 1, 1930 and Dec. 31, 1943*

	Number of Cases	Died	Post-mortem	Birthplace: West Indies	Panama	United States	Elsewhere	Parentage: West Indian	Panamanian	United States	Other
Acute rheumatic fever	80	20	14	4	65	10	1	46	21	12	1
Possible rheumatic fever	34	2	0	0	22	12	0	17	4	13	0
Healed lesions	56	28	20	7	32	15	2	30	9	15	2
Total	170	50	34	11	119	37	3	93	34	40	3

TABLE 3.—*Distribution of Rheumatic Fever by Age Groups Between Jan. 1, 1930 and Dec. 31, 1943*

	Number of Cases	Under 5 Years	5 to 10 Years	11 to 15 Years	16 to 20 Years	Over 20 Years	Miscellaneous
Acute rheumatic fever	80	5	32	17	13	13	18 deaths under 11 years of age
Possible rheumatic fever	34	2	8	8	7	9	2 deaths, aged 4½ and 11 years
Healed lesions	56	0	4	9	8	35	
Total	170	7	44	34	28	57	

parentage. Twelve were born in the United States and had been here from two weeks to two and a half years. Most of this transient group were soldiers.

There were 2 deaths among the 34 patients, but autopsies were not obtained. The 2 who died were West Indian girls aged 4½ and 11 years respectively. They were born on the Isthmus and died on their first hospital admission.

Only 2 patients were 4 years of age or younger at the time of their first admission. Eight were 5 to 10 years of age, 8 were 11 to 15, 7 were 16 to 20 and the remaining 9 patients were more than 20. Twenty-one were males and 13 were females.

C. *Inactive Rheumatic Valvular Lesions (Healed).*—Definite rheumatic valvular lesions were found in 56 patients who showed no evidence of rheumatic activity (tables 2 and 3). There were 28 deaths in this group. The clinical diagnosis of healed rheumatic heart disease was confirmed at autopsy on 20 patients. Ten of these had complications: 6 had subacute bacterial endocarditis due to Streptococcus viridans, 3 had acute bacterial endocarditis due to other organisms and 1 died of malaria. Among the 8 patients who died but on whose bodies autopsies were not held there were 5 who had positive blood cultures for Str. viridans and 1 for pneumococci. Two died in simple cardiac failure. In addition to these 28 deaths, there were 5 other patients among the 56 who had positive blood cultures (4 positive for Str. viridans and 1 for Staphylococcus aureus). However, they left the hospital and there is no record of autopsies. Thus there were 15 patients with subacute bacterial endocarditis (Str. viridans) superimposed on old healed rheumatic endocardial lesions.

The most common ages in which the healed valvular lesions were recognized in the Isthmus born group (32 patients) were between 11 and 20 years (17). All but 24 were born and had always lived in Panama. Fifteen were born in the United States, 7 in the West Indies, 1 in Poland, and the birthplace was unknown in the other. There were 26 males and 30 females in this group.

COMMENT

The patients classified as West Indians were of British or less frequently French West Indian parents who came to work for the Panama Canal either during early construction days or at a later period. Most of the British West Indians were of pure Negro stock, spoke English and had English surnames. Many of those who had rheumatic fever were of the second generation, their parents having been born on the Isthmus.

Panamanians were born locally and were of mixed blood, including combinations of white (usually Spanish), native Indian and black West Indian. These mestizo patients were all of the laboring class.

The isthmus of Panama is located 9 degrees north of the equator. The dry season is from January through April and the wet season from May through December. On the Pacific side of the Isthmus, where Gorgas Hospital is located, the average yearly maximum temperature is 87.3 F.; the average yearly minimum is 73 F. The average relative humidity is 83 per cent. There appeared to be no relationship between the admissions for rheumatic fever and the season of the year (rainy or dry), nor was there a significant yearly variance in the admissions for the disease.

The high percentage of cardiac involvement among the 80 patients with acute rheumatic fever may be due in part to our hesitation in classifying as active rheumatic fever those cases without some indication of cardiac damage. Only 1 patient escaped cardiac involvement of 16 with acute rheumatic fever treated in the colored pediatric ward from January 1941 to July 1943. Three of the 16 patients died of acute rheumatic pancarditis, and ten of the remaining 13 had symptoms and clinical signs of extensive cardiac damage. Nodes were not mentioned in the old charts, and more recently they have been found in only 1 patient. Chorea occurs in native born children, but those cases seen since 1940 have been mild.

Preliminary upper respiratory infections did not occur regularly in recent cases of rheumatic fever. Although scarlet fever occurs here, it is seldom seen in a severe form.[5] There is no record in the cases reviewed of acute rheumatic fever following shortly after scarlet fever.

It is apparent that rheumatic fever occurs in natives as well as in others who come to the Isthmus from elsewhere. This statement applies both to the initial attack and to recurrence of the disease. The mitral and aortic valvular lesions occur in similar proportions to cases seen in the United States (e. g. Wisconsin).[6]

It would appear from the available material that the incidence of rheumatic fever began to increase slowly about 1927 and since 1930 has become a rather common problem in the pediatric and medical wards in this hospital.

There are no tenable explanations for the increase in the incidence of the disease. The ability of the clinicians and pathologists of the earlier day precludes any assumption that the disease went unrecognized. Dr. Deeks, Dr. Darling, Dr. Connor, Dr. H. Clark, Dr. W. T. James, Dr. H. C. Dooling and Dr. L. B. Bates are to mention but a few of the well trained men who were observing cases either at the bedside or at the autopsy table between 1904 and 1930. It does not seem likely that the disease was brought to the Isthmus by workers from the United States. There has always been a regular yearly rate of travel between the Isthmus and the United States as the result of changes in personnel and in connection with vacations. There have been two main periods of influx of new employees in large numbers. The first was during the early construction days from 1904 to 1906, and the second more recent period was during 1940 and 1941. Rheumatic fever was uncommon following the first period and had ceased to be a rarity before the last. The variation in the total population does not explain the increase. The climate has not changed. Milk has not been nor is it now used abundantly by the natives, but it has always been an adequate part of the diet of children of workers from the United States. The native diets are fairly adequate, as frank deficiency diseases are extremely rare. No relationship between associated tropical diseases, e. g. intestinal parasites, malaria and yaws, has been demonstrated. Additional reports on the common occurrence of rheumatic carditis in tropical and subtropical regions have appeared in recent literature.[7]

CONCLUSION

Rheumatic fever is not uncommon in Panama. The course of the disease, as well as the resultant cardiac damage, resembles that found in the United States.

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Clinical Notes, Suggestions and New Instruments

SUDDEN DEATH FOLLOWING INTRAVENOUS INJECTION OF THIAMINE HYDROCHLORIDE

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There have been several reports in the literature of adverse effects following the parenteral administration of thiamine hydrochloride. Most of the untoward reactions were in the nature of hypersensitivity to the vitamin, and in only one report was a death recorded. Recently another death occurred following the intravenous administration of a solution of thiamine hydrochloride, and since vitamins are now being introduced parenterally in large quantities it seems fitting to describe this case and record the autopsy findings.

REVIEW OF THE LITERATURE

Mills [1] reported the first death in man due to an intramuscular injection of thiamine hydrochloride; at autopsy multiple ecchymoses beneath the pia over both cerebral hemispheres, with areas of encephalomalacia and perivascular hemorrhages, were found. Stern [2] described a case of "vitamin B_1 poisoning" of a cat in which 20,000 international units of the vitamin were injected via cisternal puncture. In coming out of the anesthesia the animal became very irritable, with rapid respirations and nystagmus, ending in generalized convulsions. The rapid respirations were interrupted by periods of apnea, which occurred about every four minutes; the animal died in fifty minutes.

Several reactions following the parenteral injections of a solution of thiamine hydrochloride have been observed. Stern [2] found that 15,000 international units injected into the lumbar subarachnoid space was apt to produce weakness, conjunctivitis, loss of appetite, buzzing in the ears, stiffness of the muscles and slight fever. Steinberg [3] noted the development of herpes zoster on the side of the chest in 2 patients who had been given 2,000 international units of thiamine hydrochloride intravenously weekly for several weeks, and in another who had been given 1,200 international units by mouth daily for a period of two weeks. Two other patients given parenteral injections complained of nausea and a sense of constriction of the throat. Mills [4] observed symptoms similar to those of thyroid hyperactivity, namely fine and coarse muscle tremors, rapid pulse and noticeable nervous hyperirritability, in patients taking thiamine hydrochloride orally over a period of time. Laws [5] reported that a woman was given daily, then weekly, subcutaneous injections of thiamine hydrochloride. After many of these injections, and after leaving the physician's office, she would sneeze violently several times, and the site of injection would itch for several hours. Ten days elapsed before her final injection, after which she developed generalized urticaria, edema of the face, dyspnea, cyanosis and wheezing. Intracutaneous and passive transfer tests indicated that the patient was sensitive to thiamine hydrochloride. Stiles [6] observed 2 patients in whom prolonged administration of thiamine hydrochloride produced hypersensitivity to it. One patient complained of nervousness associated with flushing and tachycardia, the other a sensation of heat and profuse perspiration. Schiff's patient [7] collapsed after having received parenteral injections for several months. She had had short bouts of nausea and sneezing after several injections. Intradermal tests indicated that she was sensitive to an aqueous solution of thiamine hydrochloride. Eisenstadt [8] added 2 cases of his own to the literature in which the patients showed allergic reactions to parenteral administration of the vitamin but who were able to tolerate it orally without adverse effects. His patients were positive to the intradermal tests but negative to the passive transfer tests. He suggested, as did Laws,[5] that patients who are about to receive thiamine hydrochloride parenterally should be skin tested as a precautionary measure. One of Leitner's patients [9] developed an asthmatic-like attack with eosinophilia after a long course of parenteral injections; the other had symptoms resembling those of thyroid overdosage. Intradermal tests with thiamine were positive. Stein and Morgenstein [10] report that a young man who received large doses of thiamine hydrochloride parenterally (from 15,000 to 30,000 international units) at first several days apart, and later at approximately monthly intervals, developed itching and a large wheal at the site of inoculation after each injection. After the last injection he collapsed; he perspired profusely, was dyspneic and cyanotic and had wheezing breath sounds. He recovered the next morning, after stimulants had been given. Later an intradermal test with a saline solution of thiamine hydrochloride was positive.

REPORT OF CASE

History.—A white woman aged 25, married, who weighed 155 pounds (70 Kg.) and measured 5 feet 10 inches (178 cm.) in height, whose past history was essentially negative and who had had measles and chickenpox as a child and pneumonia many years previously, had gone to her physician complaining of nervousness, tiredness and moderate low backache. Her physician's examination was essentially negative; the blood pressure was 116/64 and the pulse rate 90.

On Oct. 1, 1945 1 cc. of a solution of 100 mg. of thiamine hydrochloride (33,330 U. S. P. units) with 0.5 per cent chlorobutanol added as a preservative was injected intravenously. Immediately following the injection the patient complained of a generalized burning and perspired moderately. Within a few minutes, however, she stated that she felt fine. She returned to her physician's office on October 4, and after stating that she had had no untoward reactions at home during the interval she was given another injection intravenously of the same preparation. This time she had no ill effects. On October 20 the injection was repeated; again there were no complaints.

On November 6 the patient returned to the physician's office and complained of being jittery. Again 1 cc. of a solution of 100 mg. of thiamine hydrochloride was introduced intravenously. This time the patient complained of a generalized burning sensation; she perspired profusely. Within a few moments she became dyspneic and cyanotic. She was given 1 cc. of a solution of 1:1,000 epinephrine hydrochloride subcutaneously but soon lost consciousness and died. Her death occurred probably less than ten minutes after the injection of the thiamine hydrochloride had been given. Of importance was the fact that two similar injections from the same bottle had been given to 2 other patients the same day without untoward reactions.

Report of Autopsy.—The body was well developed and well nourished. In the right antecubital fossa was a small, recent area of hemorrhage in the subcutaneous tissue. Testing for air emboli revealed none in the heart. There was moderate dilatation of the right auricle and moderate fatty infiltration of the myocardium of the right and left ventricles. All lobes of the lungs were crepitant; there were a few areas of moderate firmness and granularity. The abdominal organs were hyperemic. In the brain there was a moderate hyperemia.

Microscopically the important features were the dilatation and engorgement of the veins and sinusoids of the viscera and the changes seen in the lungs. Besides the engorgement of the

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pulmonary vessels there were areas of emphysema in which the alveoli were overdistended and the septums ruptured. Occasional alveoli disclosed numerous brown pigmented macrophages suggestive of previous hemorrhages. The septums in many areas were thickened and infiltrated with a few polymorphonuclear leukocytes and round cells. The bronchioles were dilated in some areas and collapsed in others; there was some desquamation of the bronchiolar epithelium and infiltration of round cells into the walls.

COMMENT

We believe that this case is an example of death due to anaphylactic shock. The anaphylactogen was thiamine hydrochloride.

In order to achieve active anaphylaxis, the following conditions must be fulfilled: (1) the preparatory or anaphylactizing contact, (2) an appropriate period of latency, during which the organism produces antibodies, and (3) the subsequent, eliciting contact.[11] The allergization takes place as the result of numerous repeated exposures to the antigen.

The requirements for the production of active anaphylaxis, hence, were met in this patient. She had received three previous injections of the anaphylactogen; the necessary period of latency occurred; the eliciting contact was followed by death.

Anaphylaxis in human beings may evoke a variety of clinical manifestations; it is assumed that these manifestations are due to the antigen-antibody reaction either in the smooth muscle or in the capillary endothelium. In the guinea pig the characteristic feature is bronchial constriction and asphyxiation, in the rabbit constriction of pulmonary arteries and right heart failure, and in the dog fall in blood pressure.[12]

Pathologically the anaphylactic shock in this patient probably manifested itself in constriction of the pulmonary arteries with the production of pulmonary engorgement and right heart dilatation and failure. There apparently was an associated constriction of bronchioles and consequently a mild emphysema. Of interest was the finding of small foci of polymorphonuclear leukocytes and round cells in thickened septums, giving the picture of an early interstitial pneumonia. The numerous pigmented macrophages present in several alveoli might have been the result of small hemorrhages occurring after the previous anaphylactizing injections.

It is unlikely that the preservative, chlorobutanol, constituted the anaphylactogen; the amount present in the solution was extremely small. Besides, previous authors[13] had found that their patients were hypersensitive to an aqueous solution of the vitamin but not to chlorobutanol. Furthermore, it is unlikely that pyrogens were present in the vitamin preparation, since 2 other patients had been given the same preparation on the same day without ill effects.

Vitamins, like other foodstuffs, are best taken by mouth. Where parenteral administration of thiamine hydrochloride is justified, skin tests of the patient using the vitamin preparation as the allergen should be done.

CONCLUSIONS

1. Sudden death followed an intravenous injection of a solution of thiamine hydrochloride.

2. The patient had been given four injections at frequent intervals prior to death. Following the last injection she complained of a generalized burning, perspired profusely, became dyspneic and cyanotic and soon died.

3. The death is considered an example of an anaphylactic shock, the thiamine hydrochloride being the anaphylactogen.

4. Pathologically, the anaphylaxis probably manifested itself in constriction of the smooth muscles of the pulmonary arteries and bronchioles, resulting in pulmonary engorgement and right heart dilatation and failure, and in mild pulmonary emphysema, respectively. In addition, small foci of polymorphonuclear leukocytes and round cells were seen in thickened septums of pulmonary alveoli. Foci of pigmented macrophages probably indicated that previous hemorrhages had occurred following an anaphylactizing injection.

11. Urbach, E.: Allergy, New York, Grune and Stratton, 1943, p. 97.
12. Feinberg, S.: Allergy in Practice, Chicago, Year Book Publishers, 1944, p. 37.
13. Laws,[1] Schiff,[4] Eisenstadt,[8] Leitner,[9] Urbach.[11]

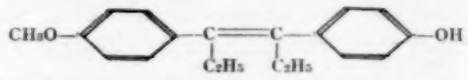
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

MONOMESTROL.—Mestilbol.—Diethylstilbestrol monomethyl ether.—3-*p*-Hydroxphenyl-4-*p*-methoxyphenyl-3-hexene.—α,α'-Diethyl-4'-methoxy-4-stilbenol.—$C_{19}H_{22}O_2$ (Molecular weight 282.37). Monomestrol may be represented by the following structural formula:



It may be prepared by methylation of diethylstilbestrol or by partial demethylation of the dimethyl ether of diethylstilbestrol. The crude product may be purified by distillation in vacuum and recrystallization from water-alcohol or from benzene-petroleum ether mixtures.

Actions and Uses.—Monomestrol is used for the same conditions for which estrogenic substances are employed, and the contraindications are essentially the same. Like other estrogens, it must be individualized since each patient presents special problems. Patients undergoing treatment should remain under constant medical supervision. Side effects are rare, but when they do occur they are usually mild, although in a few instances it may be necessary to reduce the dosage temporarily.

Dosage.—The average oral dose for the treatment of menopausal symptoms is 0.5 to 1 mg. daily by mouth, although if necessary 10 to 25 mg. may be given parenterally biweekly. Dosage for atrophic genital disorders such as kraurosis vulvae include 1 to 5 mg. daily by mouth or 25 mg. weekly by parenteral injection; for gonorrheal vaginitis of children 0.25 mg. daily; for the prevention of breast engorgement 5 to 10 mg. daily or 25 mg. the first and third days by injection; for suppression of lactation 10 mg. two or three times daily, or 25 mg. daily by injection; for prostatic cancer 2.5 mg. three times daily by mouth. The duration of treatment varies and may last for several months or even two or three years in the treatment of the menopause, a few weeks for gonorrheal vaginitis in children, a few months for atrophic genital disorders, three to five days for prevention of breast engorgement and suppression of lactation or be continuous for prostatic cancer.

Tests and Standards.—

Monomestrol occurs as an odorless, white, crystalline powder, which melts at 116-117.5 C. when recrystallized from benzene-petroleum ether (112-114 C., when recrystallized from alcohol). It is soluble in alcohol, freely soluble in acetone and in ether and practically insoluble in water, in dilute mineral acids and in dilute aqueous solutions of sodium and potassium hydroxide. It may be dissolved in vegetable oils and in dilute solutions of sodium or potassium hydroxide in 50 per cent ethanol.

To 1 mg. of monomestrol dissolved in 5 cc. of alcoholic potassium hydroxide add diluted hydrochloric acid to neutralize the solution and then add 1 cc. in excess. Add 1 cc. of molybdophosphotungstate reagent and shake. Allow to stand ten minutes, dilute to 25 cc. with water and add 5 cc. of saturated sodium carbonate solution: a blue color develops on standing. Add a few drops of 50 per cent solution of antimony pentachloride in dry *alcohol-free* chloroform to a dilute solution of monomestrol in the same solvent: a red colored solution is produced which changes rapidly to purple *(distinction from hexestrol, which gives no color).*

Dissolve 10 mg. of monomestrol in 5 cc. of concentrated sulfuric acid: an orange color is produced which disappears on dilution with water *(distinction from hexestrol and benzestrol, which give no color).*

Dry an accurately weighed specimen of monomestrol at 100 C. for four hours: the loss does not exceed 0.5 per cent. Ignite an accurately weighed specimen of monomestrol after the addition of concentrated sulfuric acid: the sulfated ash residue is not more than 1 per cent.

Transfer 0.1 Gm. of monomestrol to a 100 cc. volumetric flask and dilute to the mark with carbon tetrachloride. Transfer 10 cc. of the solution to a 250 cc. iodine flask fitted with an accurately ground stopper; add the calculated quantity plus 1 cc. of tenth-normal bromide-bromate solution (prepared according to the U. S. P. XII, p. 749); wash the walls of the flask and wet the stopper by the addition of 10 cc. of distilled water. Quickly add 10 cc. of 10 per cent hydrochloric acid and insert the wet stopper. Shake the mixture thoroughly for several minutes, then set aside in the dark at 30 C. and shake intermittently for exactly fifty minutes. At the end of this period place 2 cc. of 40 per cent potassium iodide solution around the stopper. Remove the stopper just enough to allow the potassium iodide solution to enter the flask, shake thoroughly, rinse the stopper and sides of the flask with distilled water, add 25 cc. of carbon tetrachloride and titrate with fiftieth-normal sodium thiosulfate to the disappearance of the pink color in the carbon tetrachloride. Each cubic centimeter of tenth-normal bromide-bromate solution is equivalent to 4.706 mg. of monomestrol. The monomestrol content is not less than 99 per cent. *The*

nature of the reaction between bromine and monomestrol leads to complications unless the conditions of a given procedure are strictly observed. This method of standardization must be considered tentative until more accurate analytic procedures are available.

The following dosage forms have been accepted:

WALLACE & TIERNAN PRODUCTS, INC., BELLEVILLE, N. J.

Tablets Monomestrol: 0.25 mg., 0.5 mg., 1.0 mg., 2.5 mg. and 5.0 mg.

Solution Monomestrol 10 mg. and 25 mg. per cc. (in Sesame Oil): 1 cc. ampuls.

PROCAINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1945, p. 97).

The following dosage form has been accepted:

GEORGE A. BREON & CO., INC., KANSAS CITY, MO.

Solution Procaine Hydrochloride 2% W/V: 30 cc. vials. Each cubic centimeter contains 20 mg. procaine hydrochloride in isotonic solution of sodium chloride with chlorobutanol 0.5 per cent as a preservative.

PERTUSSIS VACCINE COMBINED WITH DIPHTHERIA TOXOID (See THE JOURNAL, Jan. 5, 1946, p. 31).

The following dosage form has been accepted:

PARKE, DAVIS & CO., DETROIT

Diphtheria Toxoid-Pertussis Vaccine Mixed (Sauer): 6 cc. vials (one immunization) and 24 cc. vials (four immunizations).

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report: HOWARD A. CARTER, *Secretary.*

SUN-KRAFT COLD QUARTZ ULTRAVIOLET RAY THERAPY LAMP NOT ACCEPTABLE

Manufacturer: Sun-Kraft Incorporated, Sun-Kraft Building, 215-217 West Superior Street, Chicago 10.

In the issue of THE JOURNAL dated June 19, 1943, page 505, the Council on Physical Medicine published a report setting forth its reasons for proclaiming the Sun-Kraft Lamp unacceptable as a "sun lamp."

In view of the renewed inquiries regarding this device the Council has given further consideration to the acceptability of the Sun-Kraft Lamp, which is now labeled "Cold Quartz Ultraviolet Ray Therapy Lamp."

Construction.—The Sun-Kraft Cold Quartz Ultraviolet Ray Therapy Lamp, Model A-1, consists of a quartz tube about 6 inches (15 cm.) long and about ½ inch (1.2 cm.) in diameter containing a globule of mercury. The quartz tube is supported in a small semicylindric, chromium plated reflector. It is energized by radio frequency current, without internal wires. In the sample tested, when operated on 110 volts alternating current, the lamp consumed 26 watts, in close agreement with the claims made for it.

A small folder entitled "Sun-Kraft Cold Quartz Ultraviolet Ray Therapy Lamp" emphasizes that "it is not a Sun Lamp because its radiation of 95 per cent ultraviolet rays" [presumably the biologically effective component ultraviolet of wavelengths shorter than 3,200 angstroms is meant] are always cold and always constant in intensity, no matter how long or how often it is used." "Sun-Kraft ultraviolet rays are cold, purposely so, because heat dissipates ultraviolet rays"—an absurd claim. The peak of intensity at 2,537 angstroms is stated to be important as "it induces vitamin D production and is a powerful germicidal agent." The following are some of the questionable statements made in this folder: "The intensity is kept low to minimize any danger of overexposure." "Compilation of many years of medical research proves conclusively that ultraviolet rays, invisible to the human eye, kill bacteria, induce vitamin D, strengthen bones and teeth, and help the body resist ailments." "Ultraviolet rays stimulate circulation and aid in relieving discomforts, pain caused by respiratory ailments, such as head colds, sinus, bronchitis, asthma, hay fever, etc." "Medical science also states that ultraviolet rays aid in relieving arthritis and muscular pains. . . ." Some of these claims are either exaggerated or misleading as applied to this lamp; others are not acceptable in sales promotion.

In a booklet on "How to Use Your Sun-Kraft Cold Quartz Ultraviolet Therapy Lamp" indications are given for use of the lamp in (*a*) producing vitamin D; (*b*) treating acne, eczema, psoriasis, athlete's foot; (*c*) treating respiratory conditions, asthma, sinus, bronchitis, hay fever, catarrah and colds, by exposure to ultraviolet rays and, in addition, by *inhaling ozone* by placing the nose close to the back side of the reflector, six to twelve minutes, twice per day; (*d*) treating arthritis, rheumatism and neuritis; (*e*) producing an even facial burn (tanning); (*f*) treatment of hair and scalp; (*g*) irradiation of children; (*h*) activation of vitamin D in milk and food products, and (*i*) sterilization of air. For the latter purpose it is asserted that the ultraviolet rays and activated ozone will sterilize your room, reducing the bacterial content of the air; also that Sun-Kraft serves as a larva destroyer and deodorizer of your wardrobe closet. All of these are unwarranted or exaggerated claims. In this booklet the novel, physically absurd, assertion is made that "powerful 'Sun-Lamps' mix their ultraviolet rays with intense visible light and heat rays, which dissipate most of the ultraviolet rays before they reach the body." It is further asserted that "ultraviolet rays are eagerly absorbed by the air; the further you are from the quartz tube the less effective the rays." The latter part of this assertion is true; but absorption by the air is not the real cause of the loss in effectiveness, which is due to the rapid decrease in intensity with distance from the lamp.

Because of the low intensity it is recommended to operate the lamp at 6 inches or less. To determine the best timing and distance for each individual, an exposure of one minute at a distance of 1 inch from the edge of the reflector is recommended, two minutes at 2 inches and six minutes at 6 inches. This is just the reverse of trials with powerful ultraviolet lamps where a great distance is used in the first trials to prevent burns from overexposure.

Radiometric measurements on a Sun-Kraft lamp, made in a physical laboratory acceptable to the Council, showed that at distances of 6 inches (15 cm.) and shorter the field of irradiation was very nonuniform in intensity because of focusing of images of the quartz tube by the reflector. This nonuniformity was in three long, narrow bands (each one less than 2 cm. in width) differing by 15 to 20 per cent or more in intensity. Moreover, the total field of irradiation was small (about 10 by 20 cm.).

The following intensities, measured at right angles to the cylindric axis of the lamp (on 26 watts), were observed: at 3 inches, 190 microwatts per square centimeter; at 6 inches, 83 microwatts per square centimeter; at 24 inches (which is the minimum acceptable operating distance), 6 microwatts per square centimeter. The latter value is only one sixth of the specified minimum value (36 microwatts per square centimeter for cold quartz lamps) as required for acceptability by the Council for use as a therapeutic lamp. The ultraviolet output is about one tenth of the minimum value acceptable for use as a disinfecting lamp, and only about one fifteenth the intensity of the ultraviolet lamps used for disinfecting purposes. Exposure of the untanned inner forearm at 6 inches (15 cm.) from the lamp produced a minimum perceptible erythema in twelve to fourteen minutes in agreement with the radiometric measurements close to the lamp.

The radiometric findings show that the ultraviolet output of the Sun-Kraft model A-1 lamp, in total intensity, does not meet the Council's requirements for acceptability for use either (1) as a sun lamp (also in spectral quality) for home use or (2) as a therapeutic lamp prescribed by a physician for home use or (3) as an ultraviolet disinfecting lamp.

Furthermore, in addition to the foregoing shortcomings, because of the scientifically incorrect, misleading (even the name "Sun-Kraft" is misleading), and unfair sales promotion; the unsubstantiated claims made; and also because of the recommended inhalation of ozone, which is known to be highly toxic and irritating to the bronchial tract, the Council on Physical Medicine reiterates its declaration of unacceptability of the Sun-Kraft Cold Quartz Ultraviolet Ray Therapy Lamp for inclusion in its list of accepted devices.

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SATURDAY, FEBRUARY 23, 1946

THE AMERICAN MEDICAL ASSOCIATION HEALTH PROGRAM AND PREPAYMENT SICKNESS INSURANCE PLANS

At the annual session of the American Medical Association in Chicago in December the House of Delegates adopted a resolution instructing "the Board of Trustees and the Council on Medical Service and Public Relations to proceed as promptly as possible with the development of a specific national health program, with emphasis on the nationwide organization of locally administered prepayment medical plans sponsored by medical societies."

At a series of meetings held in Chicago beginning February 13 the Board of Trustees and the Council on Medical Service completed considerations which made possible a long step toward protecting the American people against the costs of sickness.

The fundamental step in the development of this plan was the establishment of standards of acceptance for medical care plans which have the approval of the Council on Medical Service of the American Medical Association. Any plan which meets the standards of the Council will be entitled to display the seal of acceptance of the American Medical Association on its policies and on all of its announcements and promotional material. In order to qualify for acceptance, the prepayment plan must have the approval of the state or county medical society in the area in which it operates. The medical profession in the area must assume responsibility for the medical services included in the benefits. Plans must provide free choice of a qualified doctor of medicine and maintain the personal, confidential relationship between patient and physician. The plans must be organized and operated to provide the greatest possible benefits in medical care to the subscriber.

Medical care plans may be in terms of either cash indemnity or service units, with the understanding that benefits paid in cash are to be used to assist in paying the costs incurred for medical service. The standards also include provisions relative to the actuarial data that are required, systems of accounting, supervision by appropriate state authorities and periodic checking and reporting of the progress of the plan to the Council.

Coincidentally with the announcement of these standards of acceptance there was organized, as a voluntary federation, an organization known as Associated Medical Care Plans, Inc. This independent association will include as members all plans that meet the minimum standard of the Council on Medical Service of the American Medical Association. The Associated Medical Care Plans will undertake to establish coordination and reciprocity among all of these plans to permit transference of subscribers from one plan to another and use of the benefits in any state in which a subscriber happens to be located. Under this method great industrial organizations with plants in various portions of the United States will be able to secure coverage for all their employees. Moreover, it will be possible for the Veterans Administration, welfare and industrial groups and government agencies to provide coverage for the people in any given area through a system of national enrolment. In addition the Associated Medical Care Plans, Inc., will undertake research and the compilation of statistics on medical care, provide consultation and information services based on the records of existing plans and engage in a great campaign of public education as to the medical service plan movement under the auspices of state and county medical societies.

The Board of Trustees of the American Medical Association also announced establishment of a Division of Prepayment Medical Care Plans with a director and a staff who will administer the activities related to the promotion and development of medical care plans in all the states.

In announcing these proposals for a nationwide provision of sickness insurance on a mutual nonprofit basis, the Board also presented a complete health program with ten points, which include the development of services in the field of preventive medicine, maternal and child health, voluntary prepayment plans for protection against the costs of sickness, compensation for loss of wages due to illness, the care of the veteran and the development of a high standard of housing, nutrition, clothing and recreation.

The American Medical Association last June through its Board of Trustees and Council on Medical Service announced a fourteen point program to improve the health and medical care situation in the United States. In October 1945 the interpretation of these fourteen points and methods of implementation were adopted by the Council on Medical Service. In December 1945 the House of Delegates approved the whole program, suggested its rearrangement and directed the Board of Trusteees to keep the program constantly up to date

so that it will stay at least even with and, if possible, a step ahead of the needs of the public.

With this in mind the Board of Trustees has adopted a restatement of the fourteen point program, which clarifies still further the position of the American Medical Association on some of these points and brings into the program more definitely maternal and child welfare, medical research, the medical care of the veteran and the part to be played by the voluntary health agencies.

This restatement follows:

National Health Program of
The American Medical Association

1. The American Medical Association urges a minimum standard of nutrition, housing, clothing and recreation as fundamental to good health and as an objective to be achieved in any suitable health program. The responsibility for attainment of this standard should be placed as far as possible on the individual, but the application of community effort, compatible with the maintenance of free enterprise, should be encouraged with governmental aid where needed.

2. The provision of preventive medical services through professionally competent health departments with sufficient staff and equipment to meet commmunity needs is recognized as essential in a health program. The principle of federal aid through provision of funds or personnel is recognized with the understanding that local areas shall control their own agencies as has been established in the field of education. Health departments should not assume the care of the sick as a function, since administration of medical care under such auspices tends to a deterioration in the quality of the service rendered. Medical care to those unable to provide for themselves is best administered by local and private agencies with the aid of public funds when needed. This program for national health should include the administration of medical care, including hospitalization to all those needing it but unable to pay, such medical care to be provided preferably by a physician of the patient's choice with funds provided by local agencies with the assistance of federal funds when necessary.

3. The procedures established by modern medicine for advice to the prospective mother and for adequate care in childbirth should be made available to all at a price that they can afford to pay. When local funds are lacking for the care of those unable to pay, federal aid should be supplied with the funds administered through local or state agencies.

4. The child should have throughout infancy proper attention, including scientific nutrition, immunization against preventable disease and other services included in infant welfare. Such services are best supplied by personal contact between the mother and the individual physician but may be provided through child care and infant welfare stations administered under local auspices with support by tax funds whenever the need can be shown.

5. The provision of health and diagnostic centers and hospitals necessary to community needs is an essential of good medical care. Such facilities are preferably supplied by local agencies, including the community, church and trade agencies which have been responsible for the fine development of facilities for medical care in most American communities up to this time. Where such facilities are unavailable and cannot be supplied through local or state agencies, the federal government may aid, preferably under a plan which requires that the need be shown and that the community prove its ability to maintain such institutions once they are established (Hill-Burton bill).

6. A program for medical care within the American system of individual initiative and freedom of enterprise includes the establishment of voluntary nonprofit prepayment plans for the costs of hospitalization (such as the Blue Cross plans) and voluntary nonprofit prepayment plans for medical care (such as those developed by many state and county medical societies). The principles of such insurance contracts should be acceptable to the Council on Medical Service of the American Medical Association and to the authoritative bodies of state medical associations. The evolution of voluntary prepayment insurance against the costs of sickness admits also the utilization of private sickness insurance plans which comply with state regulatory statutes and meet the standards of the Council on Medical Service of the American Medical Association.

7. A program for national health should include the administration of medical care, including hospitalization, to all veterans, such medical care to be provided preferably by a physician of the veteran's choice, with payment by the Veterans Administration through a plan mutually agreed on between the state medical association and the Veterans Administration.

8. Research for the advancement of medical science is fundamental in any national health program. The inclusion of medical research in a National Science Foundation, such as proposed in pending federal legislation, is endorsed.

9. The services rendered by volunteer philanthropic health agencies such as the American Cancer Society, the National Tuberculosis Association, the National Foundation for Infantile Paralysis, Inc., and by philanthropic agencies such as the Commonwealth Fund and the Rockefeller Foundation and similar bodies have been of vast benefit to the American people and are a natural outgrowth of the system of free enterprise and democracy that prevail in the United States. Their participation in a national health program should be encouraged, and the growth of such agencies when properly administered should be commended.

10. Fundamental to the promotion of the public health and alleviation of illness are widespread education in the field of health and the widest possible dissemination of information regarding the prevention of disease and its treatment by authoritative agencies. Health education should be considered a necessary function of all departments of public health, medical associations and school authorities.

During the coming weeks the Council on Medical Service will announce the activities that will be followed toward promoting the prepayment medical care plan and also the standards of acceptance that have been developed for such plans. The Division of Prepayment Medical Care Plans in the headquarters office will soon be active in aiding the development of plans in areas which do not now have them and in coordinating existing plans.

The policies of the Association as expressed in the National Health Program may well suggest to legislators in the Senate and in the House the point of view of the medical profession as to the part that the federal government can play in extending necessary medical services to those who do not now have them.

ANIMAL EXPERIMENTATION

An intensification of the fight to cripple or destroy medical research by legislative prohibition of animal experimentation met its first defeat recently in the New York legislature. This conflict has been waged perennially; in some states the convening of the legislature is virtually a date to include on the medical school calendar, like the opening of the fall school session or the dates of the Christmas vacation period. Efforts to hamper or prevent animal experimentation by law are now under way in several other states, including Massachusetts and in Washington, D. C. (by Congressional action).

In New York round one was won for medical science by the effective combined efforts of the New York State Medical Society, the New York Academy of Medicine, the New York State county medical societies, the medical schools of the state and others. A telling incident in the publicity campaign was the public awarding of citations by Surgeon General Norman T. Kirk to Trixie and Josie, two dogs descended from those employed by Dr. George H. Whipple in his Nobel prize winning experiments on liver diets in blood regeneration.

The threat to medical progress by interference with animal experimentation should be met at the national level by a strong organization whose influence can supplement and coordinate local activities and maintain a continuous program of educating the public regarding the necessity, the humane character and the fruits of animal experimentation in medicine and biology. Such an organization is now under way. Under the auspices of the Association of American Medical Colleges and with the cooperation of other groups a nationwide organizing board of directors has been selected. This group met in Chicago February 11 at the time of the Congress on Medical Education and Licensure, selected the tentative name National Society for Medical Research, elected Dr. A. J. Carlson chairman and Dr. Andrew C. Ivy secretary and appointed an executive committee consisting of the chairman, the secretary and Drs. C. Sidney Burwell, Eben J. Carey, L. R. Chandler, Victor Johnson and Chauncey D. Leake. The formulation of policies and procedures was also commenced and the decision reached to employ a full time executive secretary. The materials and financial resources of the Friends of Medical Research of the state of New York have been pledged to the new organization, and many medical schools have given support and funds. Additional support must come from other medical schools, state and county medical societies, academies of medicine, national professional organizations in biology and medicine, the ethical drug houses and physicians and scientists generally.

Although medical schools have pledged at least temporary financial aid, the major financial support will be forthcoming from other sources. The experience in New York and elsewhere demonstrated that funds in large amounts can be raised for a national organization.

At the December meetings the House of Delegates of the American Medical Association approved the education of the public in the benefits both to men and to animals from animal experimentation and urged that the people of the United States be completely and thoroughly informed as to these benefits and as to the effect on further progress in research on various diseases, should such animal experimentation be forbidden in any state. Cooperation with the national movement was also urged by the House of Delegates. The Board of Trustees has authorized the development of effective campaign literature and its widest possible dissemination.

FOLIC ACID THERAPY

In 1935 Day and his associates[1] of the University of Arkansas reported that young rhesus monkeys given a diet consisting of casein, polished rice, whole wheat, salt mixture, cod liver oil and ascorbic acid develop a syndrome characterized by anemia, leukopenia, loss of weight, diarrhea and ulceration of the gums. Death usually occurs between the twenty-sixth and the one hundredth day. Supplementation of this diet with riboflavin, nicotinic acid or thiamine hydrochloride, given either alone or in combination, does not prevent the development of this lethal deficiency disease. If the daily deficiency diet is supplemented with either 10 Gm. of dried brewers' yeast or 2 Gm. of liver

1. Day, P. L.; Langston, W. C., and Shukers, C. F.: J. Nutrition 9: 637 (May) 1935.

extract, however, normal body growth and a normal blood picture are maintained over a long period. From these experiments it seemed that yeast and liver extract contain an unknown substance essential to the nutrition of monkeys. For this unknown nutritional factor the Arkansas clinicians proposed the term vitamin M.

Five years later Snell and Peterson [2] of the University of Wisconsin showed that a certain "norite eluate factor" extractable from yeast or from liver extract is essential for the growth of Lactobacillus casei. It was afterward found [3] that this L. casei factor is curative of vitamin M deficiency in monkeys and necessary for normal growth and hemoglobin formation in chicks. A crystalline folic acid apparently identical with this L. casei factor was recently synthesized by Angier and his associates [4] of the Lederle Laboratories and made available for clinical trial.

The similarities of the sprue syndrome in man to the manifestations of vitamin M deficiency in monkeys led Darby and his associates [5] of Vanderbilt University to test the therapeutic value of synthetic folic acid in 3 human cases. The 3 cases were of moderate severity and had persisted for from three to ten months. Each was characterized by sore mouth, diarrhea, weakness and loss of weight of 34 to 38 pounds (15 to 17 Kg.). There was increased fat in the stools (37 per cent of dried weight), macrocytic anemia and moderate leukopenia. There was impairment of absorption, as indicated by flat oral glucose and vitamin A tolerance curves. The clinical observations otherwise fulfilled all criteria generally accepted for the diagnosis of nontropical sprue.

These patients were given daily intramuscular injections of 15 mg. of synthetic folic acid as the sole therapeutic agent. By the fourth day symptoms of glossitis had disappeared. Definite hematologic improvement was noted by the ninth day, accompanied by regeneration of the lingual papillae, subsidence of the diarrhea and considerable gain in weight. Oral glucose and vitamin A tolerance curves became more nearly normal. The striking and rapid response of these patients led Darby to confirm the belief that synthetic folic acid is identical with, or closely allied to, the substance in liver extract which is effective in the treatment of sprue.

Detailed studies of the therapeutic value of folic acid in other types of anemia are reported in this issue by Spies [6] and his associates of the Hillman Hospital, Birmingham, Ala. These clinicians tested 45 clinical cases. They found that synthetic folic acid given either parenterally or orally is effective in producing significant hemopoietic response in persons with nutritional macrocytic anemia and with macrocytic anemia of pellagra, pernicious anemia, sprue or pregnancy. They found it ineffective, however, with aplastic anemia, iron deficiency anemia and anemia associated with leukemia. Whether or not folic acid is otherwise a full therapeutic substitute for liver extract they were unable to determine from their present clinical data.

2. Snell, E. E., and Peterson, W. H.: J. Bact. **39:** 273 (March) 1940.
3. Day, P. L.; Mims, Virginia; Totter, J. R.; Stokstad, E. L. R.; Hutchings, B. L., and Sloane, N. H.: J. Biol. Chem. **157:** 423 (Jan.) 1945.
4. Angier, R. B., and others: Science **102:** 227 (Aug. 31) 1945.
5. Darby, W. J., and Jones, E.: Proc. Soc. Exper. Biol. & Med. **60:** 259 (Nov.) 1945. Darby, W. J.; Jones, E., and Johnson, H. C.: Science **103:** 108 (Jan. 25) 1946.
6. Spies, T. D.: Effect of Folic Acid on Persons with Macrocytic Anemia in Relapse, this issue, p. 474.

THE ARMY'S PHYSICAL STANDARDS FOR INDUCTIONS

In the propaganda for a change in the nature of the practice of medicine, those who support government controlled medical care have emphasized chiefly up to now the number of men rejected by the armed forces as unfit for military service. Even President Truman, in sending his health message to Congress, dwelt considerably on these figures. Now the Army has suddenly lowered the physical standards for induction under the Selective Service; it will accept for induction men with the following physical defects previously listed as unqualified for military service:

> Lateral deviation of the spine from the midline of more than 1 inch and less than 2 inches; history of thyroidectomy for toxic goiter with complete absence of active manifestations for two years; hernia, inguinal, which has not descended into the scrotum; hernia, femoral; individuals with local paralyses such as those due to poliomyelitis or nonprogressive disease of the peripheral nerves of such degree that they disqualify for general military service but have not interfered with locomotion and have not prevented the individual from successfully following a useful vocation in civil life; stuttering or stammering of a degree disqualifying for general military service but which has not prevented the man from successfully following a useful vocation in civil life; mild neuroses; moderate transient psychoneurotic reaction, and mental deficiencies, mild in degree.

Thus the Army suddenly deprives these propagandists of one of their main arguments. The number of men rejected becomes considerably less; many men who would have been rejected under previous standards are now considered fit. THE JOURNAL has insisted again and again that the arguments of Senators Murray and Wagner and Congressman Dingell, who also emphasized the draft statistics, were without scientific foundation. Now the Army has proved them without scientific foundation. When a nation selects the highest standard of fitness for military service that any nation has ever established, people need not be surprised if the number of rejections is greater than those of nations whose standards are considerably lower. The public has little or no knowledge of the measuring stick that was used. Now the fact that the Army can change its measuring stick any time it wants to do so becomes clearly apparent.

Current Comment

NEUROLOGIC COMPLICATIONS OF MENINGOCOCCIC MENINGITIS

Neurologic sequels of meningococcic meningitis such as paralysis, deafness, deaf mutism or aphasic difficulties are frequent. The most common late complication is chronic hydrocephalus. Bailey [1] recently reported 4 cases in which neurologic complications followed the suppression of suppurative meningitis by sulfonamides or penicillin. In all the course of events was much the same: an acute purulent infection was controlled or cured by administration of sulfonamides or penicillin, but death or some serious neurologic disturbance developed. These therapeutic agents, Bailey says, do not exert any restraining influence on the fibroblasts which organize the exudate surrounding the meninges. The result is the formation of a dense scar through which the cerebrospinal fluid cannot circulate. The contraction of this scar tissue may constrict blood vessels and pathways essential to proper functioning of the nervous system. He does not suggest that these drugs be discarded in the treatment of suppurative leptomeningitis but offers a plea for early diagnosis and intensive therapy before a massive exudate has occurred. The prognosis in these cases is uncertain.

SLEEP DISTURBANCES OF CENTRAL ORIGIN

The evidence that lesions at the corticodiencephalic level are responsible for pathologic disturbances in sleep is scanty. Recently Davison and Demuth [1] studied 25 cases in which pathologic disturbances in the sleep mechanism was an important symptom. In 16 of these cases the hypothalamus was compressed and in all of them pathologic changes were found in the nerve cells of the hypothalamus. In 4 additional cases invasion of the hypothalamus with tumor cells had occurred, and in 1 there was partial destruction of the hypothalamus. Two cases showed compression of the hypothalamus with changes in the nerve cells; in 2 there was no compression of the hypothalamus or nerve cell changes. Compression or invasion of the basal ganglions existed in 16 cases in which there was also compression or invasion of the hypothalamus. Tumors were found in the suprasellar region in 3 cases, and these were included because of the involvement of the hypothalamus or its pathways. Increased intracranial pressure was found in 18 cases and was absent in 7. Diplopia, ptosis, weakness of ocular movements and impairment of conjugate deviation were found in 4 cases. Hypothermia was present in 4 cases. As a result of these and other investigations certain afferent and efferent connections concerned with sleep mechanisms were postulated: 1. The medial forebrain bundle (part of the hippocampohypothalamic tract, running between the ventromedial olfactory correlation areas of the cortex and the preoptic and hypothalamic areas; there is some evidence for the passage of a septohypothalamic tract via this bundle. 2. Corticohypothalamic fibers, via the fornix, arising in the hippocampus and ending in the medial and lateral mamillary nuclei and in the adjacent rostral portion of the tuber cinereum. 3. Inferior thalamic peduncle; fibers connecting the cortex and the hypothalamus via this peduncle probably originate in the frontal, temporal and hippocampal convolutions. 4. Hypothalamocortical fibers; such connections have not been demonstrated, but their existence is probable.

1. Bailey, Percival: Chronic Leptomeningeal Thickening Following Treatment of Meningitis with Sulfa Drugs, Ann. Surg. **122**: 917 (Dec.) 1945.

1. Davison, Charles, and Demuth, Edwin L.: Disturbances in Sleep Mechanism: A Clinicopathologic Study, Arch. Neurol. & Psychiat. **54**: 241 (Oct.) 1945.

NORTH CAROLINA'S PROPOSAL FOR HOSPITAL AND MEDICAL CARE

In a handsome brochure addressed to the people of North Carolina,[1] a commission composed of physicians and leading citizens from other walks of life, including some representatives of the clergy, issue a "statement and appeal to the people of the state." The appeal is based on a number of committee recommendations concerning the proposal for North Carolina of a four year medical school, the meeting of hospital and medical needs of urban and industrial populations, the hospital and medical care of rural populations and the special needs of the Negro population. Each of these areas has been studied by a special subcommittee, and in addition studies were made of hospital and medical programs in other states. The commission concludes that North Carolina has three primary needs: more doctors, more hospitals and more insurance. A convincing case is made in the brochure for the need for more doctors and better distribution. Significant is endorsement of cooperation between North Carolina and adjoining states in establishing a regional medical school for Negroes. The commission also points out convincingly the need for hospitals. Support is given to the Blue Cross hospitalization plan, and the commission expresses its belief that every citizen needs to realize that it is just as important to have insurance against sickness disasters as against fire disasters.

ERYTHROBLASTOSIS FETALIS

Nine cases of erythroblastosis fetalis have been reported by Polayes and Ohlbaum.[1] In each instance the mother belonged to blood group O and the infant belonged to blood group A. The mother's serum showed abnormally high anti-A agglutinin titers. The Rh factor and the Hr antigen were eliminated as possible immunizing antigens in each case. Most of the infants had a relatively mild form of hemolytic disease of the newborn, but 2 of the 9 infants died. Postmortem examination showed the anatomic changes characteristic of erythroblastosis fetalis. The authors believe that erythroblastosis fetalis may result from isoimmunization with the A and possibly the B antigen by a mechanism similar to that already established for the Rh factor.

1. To All the People of North Carolina: A Proposed Statewide Program of Hospital and Medical Care, by the Governor's Commission, 1945.

1. Polayes, S. H., and Ohlbaum, Clarence: Erythroblastosis Fetalis Unrelated to the Rh Factor, Am. J. Clin. Path. **15**: 467 (Oct.) 1945.

MEDICINE AND THE WAR

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

REFUSAL TO DEFER PREMEDICAL STUDENTS CONFIRMED

In a letter to Dr. Frank H. Lahey, chairman of the Procurement and Assignment Service, the Office of War Mobilization and Reconversion again refuses to take any action to defer premedical students. The letter follows:

OFFICE OF WAR MOBILIZATION
AND RECONVERSION
Washington, D. C.

Jan. 29, 1946.

Office of the Director

Dear Dr. Lahey:

This will acknowledge your letter of January 15 and the attached statement supporting Dr. Barton's oral presentation of the case for deferring premedical and predental students. Copies of your statement were supplied to all members of the Inter-Agency Committee on Manpower Shortages. After full consideration of the facts which you presented and of the current and prospective manpower situation, we have decided that we cannot ask that special deferment consideration be extended to this group at this time.

This decision is based upon the following considerations:

1. The Army is now in urgent need of replacements for men who have served for long periods. The bulk of all replacements must come from the 18 year old group. In the face of this need, we do not feel that any group of men becoming 18 years of age can be deferred at this particular time.

2. We anticipate that the number of veterans entering various classes of premedical and predental school during the coming year and the following years will be far in excess of the numbers that would be expected if enrolments in the fall term of 1945 were extended as a basis for estimates. Your estimates of premedical and predental students who will be ready to enter medical or dental school during and after 1948 therefore appear low.

3. While there may be fewer doctors and dentists than the nation actually needs during the coming years, this is also true of a number of other professional fields equally essential to the national welfare. We have, for example, recently declined to urge special deferment consideration for students in scientific and engineering fields who have completed less than three years of work. Our policy is to urge special deferment consideration only for advanced students. Premedical and predental students do not fall within this category.

4. In view of the long average periods of active work in professional fields, and the possibility of expansion in medical education, we do not feel that failure to maintain premedical and predental training at capacity for a short period will significantly reduce the number of doctors and dentists available in the coming years.

We shall continue to balance the manpower needs of the armed forces against requirements for the civilian economy. If extension of deferments appears possible in the future, the status of premedical and predental students will be reviewed again.

Sincerely yours,
J. DONALD KINGSLEY
Director for Manpower
and
Chairman, Inter-Agency
Committee on Manpower Shortages.

ARMY

NOMINATE ASSISTANTS TO THE SURGEON GENERAL

The President recently recommended to the Senate the nominations of Brig. Gens. George S. Beach Jr., Raymond W. Bliss and Edward A. Noyes to be assistants to the Surgeon General with the rank of brigadier general for a term of four years.

General Beach has been commanding general of Brooke General Hospital, Fort Sam Houston, Texas, since July 1941. General Bliss, recently appointed Deputy Surgeon General in addition to his duties as Assistant Surgeon General and Chief of Operations Service, has been with the Army since 1912. General Noyes, surgeon of the Fifth Service Command, Fort Hayes, Ohio, since 1944, was formerly commanding general of Cushing General Hospital at Framingham, Mass. He accepted a Regular Army commission in 1916.

APPOINTED COMMANDING OFFICER OF ENLISTED PERSONNEL

Major Edward G. Streidl, formerly executive officer of the Medical Field Service School, Carlisle Barracks, Pa., was recently appointed commanding officer of the enlisted personnel at the Army Medical Center, Washington, D. C. Major Streidl entered the army in 1930.

NUMBER OF MEDICAL OFFICERS RELEASED

The Office of the Surgeon General recently stated that, up to January 26, 23,779 medical officers and 32,395 nurses had been released from service.

ARMY AWARDS AND COMMENDATIONS

Brigadier General Stanhope Bayne-Jones

Brig. Gen. Stanhope Bayne-Jones, Deputy Chief of the Preventive Medicine Service, Office of the Surgeon General, was recently awarded the Distinguished Service Medal for his outstanding "contribution to the maintenance of health within the Army. As administrator of the Epidemiological Board, he directed the extension, administration and military application of the world-wide research and control program conducted by this board and its ten commissions."

General Bayne-Jones graduated from Johns Hopkins University School of Medicine, Baltimore, in 1914. He entered the Medical Reserve Corps in 1915 and served throughout World War I. From 1917 to 1918 he served with the British Expeditionary Forces in France and Italy and later with the AEF in France and Germany, and has been decorated with the British Military Cross, the French Croix de Guerre and the Silver Star with two Oak Leaf Clusters.

Prior to being ordered to active duty in 1942, General Bayne-Jones was professor of bacteriology at Yale University and had held the position of dean of the School of Medicine at that university.

Colonel Hirsh Julian Frachtman

Col. Hirsh Julian Frachtman, formerly of Houston, Texas, was recently awarded the Bronze Star for meritorious service as Chief of Medical Service of the 22d Station Hospital in the Central Pacific Base Command. The citation accompanying the award read: "For meritorious service in connection with military operations against the enemy from Feb. 10, 1944 to July 1, 1945. As chief of Medical Service, 22d Station Hospital, with an acute shortage of personnel and with heavy patient loads,

Colonel Frachtman organized and developed the medical service to a peak of operating efficiency. Through his tireless devotion to duty, diligence, ingenuity and superior planning, he contributed materially to the successful operation of the 22d Station Hospital. The outstanding performance of duty displayed by Colonel Frachtman reflects great credit on himself and the military service." Dr. Frachtman graduated from the University of Texas Medical Branch, Galveston, in 1937 and entered the service Nov. 6, 1940.

Lieutenant Colonel Albert B. Sabin

Lieut. Col. Albert B. Sabin of Cincinnati was recently awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding service in connection with the investigation and control of sandfly fever, dengue fever and Japanese B encephalitis." Dr. Sabin graduated from the New York University College of Medicine, New York, in 1931 and entered the service April 21, 1943.

Lieutenant Colonel Kerwin Armand Fischer

The Legion of Merit was recently presented to Dr. K. Armand Fischer, Louisville, Ky., for his work as chief of the orthopedic section of Billings General Hospital at Indianapolis. As a lieutenant colonel, Dr. Fischer "performed a tremendous number of difficult major orthopedic operations" and trained young officers in orthopedic surgery, saving "many days of hospitalization" for patients at Billings. Dr. Fischer graduated from the University of Louisville School of Medicine in 1926 and entered the service July 8, 1942.

Colonel John H. Talbott

Col. John H. Talbott, commanding officer and director of research of the Quartermaster Climatic Research Laboratory, Lawrence, Mass., was recently awarded the Legion of Merit for his "professional skill, inspirational leadership and comprehensive understanding of the problems of thermoconductivity which enabled him to contribute to the welfare and morale of every combat soldier." Dr. Talbott graduated from Harvard Medical School, Boston, in 1929 and entered the service May 17, 1942.

Colonel Franklin G. Ebaugh

Col. Franklin G. Ebaugh of Denver was recently awarded the Legion of Merit for "organizing the psychiatric services in various general and regional hospitals" in the Eighth Service Command, where he was Neuropsychiatric Consultant. "Colonel Ebaugh also developed an outstanding medical educational program which coordinated the neuropsychiatric field with the other phases of the medical services." Dr. Ebaugh graduated from Johns Hopkins University School of Medicine, Baltimore, in 1919 and entered the service Sept. 15, 1942.

MISCELLANEOUS

UNRRA NEWS

Outfit Twenty-Eight Hospitals in Europe

The United Nations Relief and Rehabilitation Administration is outfitting twenty-eight hospitals, totaling more than 26,000 beds, in three European countries. The hospital outfits have been purchased from army surpluses in the United Kingdom and on the European continent and are being trucked or shipped by sea to Czechoslovakia, Poland and Yugoslavia. The outfits include surgical instruments, beds, blankets, account books and case record charts.

In addition to their work in obtaining the larger units, the UNRRA medical supply men are continuing to comb military surplus stock to obtain equipment for approximately forty-five convalescence centers which will be able to handle less serious cases of illness and those which are enabled after treatment to be moved out of the hospitals to make way for other serious cases.

Public Health Activities in Poland

After a tour of inspection of UNRRA'S public health activities in Poland Dr. W. A. Sawyer, director of health, UNRRA headquarters, reported that he visited Warsaw, Lublin, Cracow, Breslau, Posen and Lodz. Most of his time was spent in consultation with Poland's public health officials and the UNRRA staff and in visiting hospitals, health centers and medical schools. Lectures on the discoveries and new methods in public health and medicine were given in all these cities as the doctors had been isolated for six years from the advances in medicine in the outside world.

In his report Dr. Sawyer stated that the picture presented by Poland today is that of a country recovering from a degree of physical destruction and personal suffering hard to imagine and impossible to describe. The people lack almost everything —food, shelter, clothing—everything except courage and the will to pull themselves up again by their bootstraps. The spirit of Poland is as wonderful as the conditions are appalling.

The most serious health problem is that of preventing the spread of typhoid. Peacetime preventive measures such as chlorinating water supplies have been seriously affected by the destruction of war. The problem of control is aggravated by the tremendous movements of population both within the country and from without. Diphtheria too is giving the health officials great concern. Tuberculosis is widespread as an inevitable result of food shortages, lack of adequate shelter and similar hardships resulting from the war.

Dr. Sawyer further stated that he was greatly impressed by the earnestness and competence of Poland's health officials both in the central Ministry of Health and among health officials in the field. Our relations with them are most satisfactory, and they are doing everything in their power to put the supplies provided by UNRRA to good use among those in greatest need. Although the winter months ahead present critical disease problems, the introduction of supplies, of transportation and of professional health consultants is probably early enough to enable Poland's effective Ministry of Health to cope with the difficulties. UNRRA'S Health Division will do its utmost to make a successful campaign possible.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

INDIANA

Indianapolis City Hospital, Indianapolis. Capacity, 739; admissions, 10,231. Dr. Charles W. Myers, Superintendent (resident—psychiatry).

KANSAS

University of Kansas Hospital, Kansas City. Capacity, 400; admissions, 8,247. Dr. T. G. Orr (resident—anesthesia).

MASSACHUSETTS

Lowell General Hospital, Lowell. Capacity, 188; admissions, 3,068. Miss Carrie B. Knowlton, R.N., Superintendent (2 interns, April 1).

MISSOURI

St. Joseph's Hospital, St. Joseph. Capacity, 150; admissions, 3,623. Sister Catherine, R.N., Administrator (interns, residents—mixed service).

OHIO

Lakewood Hospital, Lakewood. Capacity, 157; admissions, 4,677. Dr. R. B. Crawford, Superintendent (interns, residents—mixed service).

PENNSYLVANIA

Women's Homeopathic Hospital, Philadelphia. Capacity, 210; admissions, 3,765. Miss Mary A. Smith, R.N., Superintendent (interns, April 1).

VIRGINIA

Elizabeth Buxton Hospital, Newport News. Capacity, 181; admissions, 6,947. Dr. Russell Buxton, Superintendent (residents—mixed service).

WASHINGTON

Providence Hospital, Seattle. Capacity, 434; admissions, 11,810. Sister Bernardine, R.N., Superintendent (4 interns, July 1).

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Askin, Henry E., Lt. Col., 1200 S. Central Ave., Alexander City.
Blackburn, Cecil H., 1st Lt., 300 42nd St., Fairfield.
Davidson, M. T., Major, 2937 Southwood Road, Birmingham.
Landy, Aaron E., Major, Vet. Hosp., Montgomery.
Lewis, Lawrence C., Jr., Major, Box 599, Tuskegee.
Owen, Hubert R., Capt., 7759 First Avenue, S., Birmingham.
Parker, Delmer F., Maj., 732 Linwood Road, Birmingham.
Turbeville, Fred M., 1st Lt., 728 9th Court West, Birmingham.

Arizona

Cameron, Lester, Major, Veterans Admin., Tucson.
Jeffery, Vogel J., Capt., Box 966, Buckeye.
Kendig, Tom A., Capt., BX 735, Safford.
Lewis, William G., Capt., Winslow Indian Sanit., Winslow.
Lillibridge, Harold D., Lt. Col., Vet. Adm. Tucson.
Mervynne, Robert D., Capt., St. Joseph's Hosp., Phoenix.
Powell, Charles S., Capt., 607 8th Avenue, Yuma.
Robinson, Joseph A., Major, Veterans Admin., Whipple.
Sult, Charles W. Jr., Major, 710 Professional Bldg., Phoenix.
Westervelt, M. W., 1st Lt., P.O. Box 905, Camp Alegre, Tempe.

Arkansas

Briggs, Barnett P., Major, 701 Main St., Little Rock.
Easterling, Walter D., Major, Lake Village.
Fried, David D., Major, Bigford.
Futrell, Junius B., Major, Rector.
Hardeman, Daniel R. Jr., Capt., 515 Boyle Bldg., Little Rock.
Harrell, W. B., Major, U. of Ark. School of Med., Little Rock.
Holder, James B. Jr., Major, Monticello.
Johnson, Julius D., Major, PO Box 566, Ft. Smith.
Jones, Erner, Major, 1505 Hangar St., Little Rock.
Jones, Robert D., Capt., Harrell.
McCoy, Orville B., Capt., Box 446, Harrison.
Monfort, John J., Capt., 590 Vine St., Batesville.
Monroe, Sanford C., Major, 112 N. Washington St., Magnolia.
Peeler, Malcolm O., Capt., Pangburn.
Rasco, Charles W., Jr., Capt., DeWitt.
Riley, Joseph P., Jr., Major, Eudora.
Riley, Wilbur K., Major, Vet. Admin., North Little Rock.
Ruff, John L., Capt., Searcy.
Slaughter, Wilbur L., Major, 309 Montgomery St., Clarksville.
Sneed, John Wilson, Jr., Capt., 805 W. Arch St., Searcy.
Stocker, William J., Capt., 408 N. 14th St., Ft. Smith.

California

Angelia, Carl L., Capt., 401 Tahoe Ave., Roseville.
Ankele, Cordes W., Major, 2719 10th Ave., Sacramento.
Barnes, Norman J., Major, 626 N. Sycamor Ave., Hollywood.
Berry, Bard S., Capt., 163 Iris St., Redwood City.
Bowles, Frank H. Jr., Capt., 2530 Fillmore St., San Francisco.
Bross, Samuel I., Capt., Apt. B, 5035 Geary Blvd., San Francisco.
Burns, Melton B., Capt., 1885 E. Mountain St., Pasadena.
Campisi, Dominic A., Major, 84 S. 6th St., San Jose.
Clausen, Edwin G., Major, Ferndale.
Conrad, Simon J., Capt., Camarillo State Hosp., Camarillo.
Cornell, Chester E., Capt., 4339 7th Ave., Los Angeles.
Daniels, Elijah R., Capt., 621 Haven Park Ave., El Monte.
Eneboe, John B., Capt., 221 N. Maple Ave., Montebello.
Englehorn, Theodore D., Capt., 339 Quilla St., Salinas.
Ervin, Clinton V., Jr., Major, 1507 7th Ave., San Francisco.
Falk, Harry, Major, 1734 36th Ave., San Francisco.
Gardner, Robert T. Jr., Capt., Vauclain Home, San Diego.
Gentry, Harold G., Capt., 905 W. Highland Ave., Redlands.
Greenhood, Herbert, Major, 6618 Dana St., Oakland.
Groat, Milton J., Capt., 233 S. Park Ave., Montebello.
Harding, William F., Major, 2951 26th St., Sacramento.
Hollombe, Benjamin S., Capt., 826 N. Soto St., Los Angeles.
Hope, Robert B., Major, 3380 Ley Dr., Los Angeles.
James, John B., Capt., 1142 E. Valley Blvd., El Monte
Kearney, Sanborn G., Major, 1507 Chapala St., Bakersfield.
Kohlenberger, Charles F. W., Capt., 108 E. Wilshire, Fullerton.
Lerch, Theodore T., Capt., 463 Perry St., Oakland.
Lloyd, Oliver D., Major, 332 S. Plymouth Blvd., Los Angeles.
McClurkin, Arthur A., Major, 3111 N. Broadway, Los Angeles.
McCune, Scott S., Major, 635 S. Westlake, Los Angeles.
Merrill, John A., Major, 215 Franklyn St., Monterey.
Miller, Clark R., Capt., 950 S. Fremont, San Mateo.
Moss, George L., Major, Orange County Hospital, Santa Ana.
Munger, John R., Capt., 1303 San Pablo St., Los Angeles.
Olson, William A., Capt., 1200 N. State St., Los Angeles.
Pettit, R. D., Capt., % R. E. Pettit, Chamb. of Com., San Jose

California—Continued

Rew, Kenneth G., Major, 450 Sutter St., San Francisco.
Rochex, Francis J., Major, 200 Castanada Ave., San Francisco.
Shulman, Alexander G., Capt., 536 Glenwood Road, Glendale.
Simonds, Robert, Major, 1921 S. Bedford St., Los Angeles.
Stevens, Weir C., Capt., 400 Hilgard Ave., West Los Angeles.
Stolfa, Laddie L., Capt., General Hosp., Los Angeles.
Tedstrom, Milo K., Lt. Col., 2215 N. Flower, Santa Ana.
Thurber, Packard, Jr., Capt., 417 S. Hill St., Los Angeles.
Tufts, Elwood F., Major, 1515 10th St., Sacramento.
Vogel, Philip J., Major, Glendale.
Watson, Robert W., Capt., 4634 Maubert Ave., Hollywood.
Yant, James H., Major, Route 5, Box 8490, Sacramento.

Colorado

Abrums, William W., Capt., 317 S. Maple St., Trinidad.
Anderson, Roland R., Capt., 5000 W. 33d Ave., Denver.
Boyd, Walter M., Capt., Louisville.
Buchtel, Henry A., Major, 1224 Republic Bldg., Denver.
Carroll, Charles A., Capt., 1006 Akin Ave., Ft. Collins.
Cohen, Edmond F., Major, 925 Republic Bldg., Denver.
Dague, John C., Capt., 1401 High, Apt. 6, Denver.
Hughes, Harry C., Major, 555 Madison St., Denver.
Jacobs, John T., Major, 1631 11th Ave., Greeley.
Kotin, Paul, Capt., Shoenberg Farm, Arvada.
Maxwell, Irwin E., Major, Durango.
Neel, William U., Capt., 2105 West St., Pueblo.
Nethery, Raymond A., Major, Corwin Hosp., Pueblo.
Oxman, Bertram S., Capt., 2761 S. Logan, Denver.
Porter, Bruce M., Capt., 2502 Depew St., Denver.
Porter, Robert T., Major, 1229 17th St., Greeley.
Swartz, Carl W., Jr., Capt., 609 W. 14th St., Pueblo.
Taylor, Gwendolyn E., Capt., 1012 Main St., Canon City.

Connecticut

Abbey, Edward A., Col., 255 Bradley St., New Haven.
Bumstead, John H., Lt. Col., 82 Blake Road, Hamden.
Burke, Francis H., Major, 45 Park St., Rockville.
Caserta, Silvio J., Major, 85 Beardsley Park Terr., Bridgeport.
Cohn, Samuel H., Major, 715 Asylum Ave., Hartford.
Desmond, Charles T., Capt., 50 Willard St., Hartford.
Fabricant, Milton W., Capt., 28 Pleasant St., New London.
Fagan, Francis X., Major, 449 Farmington Ave., Hartford.
Garofalo, Mario L., Capt., 855 Orange St., New Haven.
Haliday, Earle G., Capt., 168 Water St., Stonington.
Irving, James G., Capt., 151 Farmington Ave., Hartford.
Koufman, William B., Lt. Col., 825 Elm St., New Haven.
Levine, Howard, Capt., 133 Smalley St., New Britain.
Marshak, Irving J., Capt., 587 Central Ave., New Haven.
Millen, Samuel R., Capt., State Vet. Hosp., Rocky Hill.
Ottenheimer, Edward J., Major, Windham.
Pagliaro, Joseph J., Lt. Col., 239 Housatonic Ave., Derby.
Pelz, Kurt S., Capt., 26 S. Main St., Wallingford.
Popkin, Michael S., Capt., 3223 Main St., Bridgeport.
Ruby, Robert J., Major, 58 Columbia Blvd., Waterbury.
Sneidman, George I., Col., 18 Asylum St., Hartford.
Weisenfeld, Nathan, Capt., 608 Blvd., Hills Ave., Hartford.

Delaware

Bancroft, Charles M., Capt., Med. Arts Bldg., Wilmington.
Beatty, Gerald A., Major, 2004 Park Dr., Wilmington.
Berlin, Irvin I., Capt., 700 N. Jackson St., Wilmington.
Olivere, Peter J., Capt., 2710 Baynard Blvd., Wilmington.
Russo, Joseph R., Capt., 2406 Delaware Ave., Wilmington.
Sturman, William A., Capt., 1113 S. Broom St., Wilmington.

Florida

Alexander, Julius, Major, 2323 S. Miami Ave., Miami.
Anderson, Clyde O., Capt., 1212 15th Ave., N., St. Petersburg.
Camp, Milton N., Major, 720 Sweet Bldg., Ft. Lauderdale.
Carroll, Bruce D., Lt. Col., 894 N.E. 81st St., Miami.
Dawson, George M., Lt. Col., 100 Wildemere Rd., West Palm Beach.
Frehling, Stanley, Capt., 602 DuPont Bldg., Miami.
Hopkins, Clack D., Lt. Col., 1812 Jetton Ave., Tampa.
Jennings, Lloyd H., Capt., 400 W. Call St., Starke.
Kirkpatrick, Jere W., Capt., P.O. Box 211, Hernando.
Ombres, Severn R., Capt., 236 Australian Ave., Palm Beach.
Purcell, Thomas R., Major, 101 Bay St., Tarpon Springs.
Quillian, Millard P., Capt., 2801 River View Blvd., Bradenton.
Roberts, Thomas L., Capt., 902 Salzeto St., Coral Gables.
Sternberg, Jacob C., Major, 2280 S.W. 16th Court, Miami.

PHYSICIANS SEPARATED FROM SERVICE

Georgia

Atkinson, Samuel C., Capt., Waverly.
Black, Millard W., Capt., City Hospital, Columbus.
Edwards, Franklin D., Major, 1344 2nd Ave., Columbus.
Garrett, Luke Glenn Jr., Capt., Austell.
Hendry, William A., Major, Blackshear.
Jones, Robert T. III, Capt., Canton.
Long, Harold W., Major, Eastman.
Michael, Max, Jr., Capt., 1260 Milledge Ave., Athens.
Morton, John B., Major, Gray.
Rogers, James T., Lt. Col., 219 N. Bradford St., Gainesville.
Rubin, Harry, Col., 505 E. 50th St., Savannah.
Stapleton, John L., Lt. Col., 2009 18th Avenue, Columbus.
Wood, David L., Capt., 202 Kind St., Dalton.
Yeomans, James W., Capt., 208 Main St., Barnesville.

Illinois

Albaum, Joseph, Capt., 861 S. State St., Lincoln.
Albers, Elmer A., Capt., 34 Logan St., Lemont.
Andrew, Lloyd B., Major, Vet. Admin. Facility, Hines.
Appelbaum, Israel, Capt., 5036 N. Springfield Ave., Chicago.
Bancroft, Burton R., Major, 319 N. Grove, Oak Park.
Barnett, Harry E., Capt., 211 S. Central Ave., Chicago.
Beaton, Lindsay E., Capt., 914 B Crain St., Evanston.
Beinar, Peter J., Capt., 3301 Emerald Ave., Chicago.
Bernstein, Morley L., Capt., Michael Reese Hospital, Chicago.
Blondis, Ernest R., Capt., 707 McCarthy Road, Lemont.
Bobrow, Leon B., 1st Lt., 4531 N. Kimball, Chicago.
Boros, Eugene J., Capt., Bethany.
Boylson, Myron I., Capt., 310 E. Daggy St., Tuscola.
Brehaus, Herbert C., Capt., 11171 S. Lothair Ave., Chicago.
Callahan, James J., Lt. Col., 511 Linden Ave., Oak Park.
Campbell, Edward D., Major, Xenia.
Casey, Emmet F., Major, 7243 Rascher St., Chicago.
Cohn, Isadore H., Capt., 39 S. St. Louis St., Chicago.
Comess, Oscar H., Major, 3227 W. Thomas St., Chicago.
Coopersmith, Max M., Capt., 6802 Merrill Ave., Chicago.
Crane, Cyril V., Lt Col., 6810 S. Loomis St., Chicago.
Daly, Philip A., Lt Col., 6853 Jeffery Ave., Chicago.
Davis, Landis Y., Major, Baylis.
Dexheimer, Herbert P., Capt., 703 S. Lincoln, O'Fallon.
Donlon, Francis P., Capt., 3065 Palmer Square, Chicago.
Droege, Edward H., Lt. Col., 1350 27th St., Granite City.
Dvonch, William J., Major, 2859 W. Cermak Rd., Chicago.
Eilert, William G., Major, 410 Downer Place, Aurora.
Fenwick, Herbert F., Major, 167th S. & 107th W., Orland Park.
Finkle, Albert M., Capt., 6439 N. Maplewood, Chicago.
Fox, William W., Major, 861 S. State St., Lincoln.
Franco, Joseph R., Capt., 5914 W. Roosevelt Road, Chicago.
Gaines, Walter, Capt., 4519 N. Harding Ave., Chicago.
Ginnan, Edward J., Capt., 850 S. 17th, Maywood.
Goodman, Daniel H., Capt., 1644 N. Seminary, Galesburg.
Greenberg, Harold A., Major, 2035 E. 73d St., Chicago.
Groth, Norton R., Major, 1001 Columbian Ave., Oak Park.
Hall, James W. Jr., Lt. Col., 8021 Kingston Ave., Chicago.
Heyer, Howard E., Major, 400 Washington Blvd., Chicago.
Hilker, Albert W., Capt., 233 N. Harvey Ave., Oak Park.
Jones, Robert M., Lt. Col. 214 Fifth St., Wilmette.
Kalisz, Walter F., Major, 1110 Milwaukee Ave., Chicago.
Kallen, Irwin A., Capt., 3856 W. Grenshaw St., Chicago.
Kreft, Alfred J., Major, 904 Lee St., Des Plaines.
Kwinn, Frank C., Capt., 1651 W. 47th St., Chicago.
Landmann, Paul E., Capt., 207 N. Reed St., Joliet.
Lando, Leon, Capt., 184 W. Beardstown St., Virginia.
Lewy, Robert B., Major, 2051 E. 72nd Place, Chicago.
Lindberg, Howard A., Lt. Col., 400 Deming Pl., Chicago.
Loverde, Albert A., Capt., 4145 Eddy St., Chicago.
McClosky, James D., Major, 207 E. 12th St., Alton.
MacKoff, Herman, Major, 6600 S. Sacramento Ave., Chicago.
Marcus, Samuel M., 1st Lt., 1245 S. St. Louis Ave., Chicago.
Marvel, Wiley R., Capt., Weldon.
Masor, Nathan A., Capt., 808 Junior Terrace, Chicago.
Mercer, Ray, Lt. Col., 811-13 W. C. U. Bldg., Quincy.
Miller, Edward B., Capt., 5426 Maryland Ave., Chicago.
Mitrick, Joseph M., Capt., 8718 S. Marshfield Ave., Chicago.
Moffatt, John S., Major, Byron.
Morris, Richard P., Capt., 5710 Maryland Ave., Chicago.
Moskal, Frank J., Capt., 4214 W. 25th Place, Chicago.
Murray, Don E., Capt., 1400 Lake Shore Dr., Chicago.
Nelson, Glenn S., Capt., 6135 Glenwood Ave., Chicago.
Norris, Harold V., Major, 409 Farmers Bk. Bldg., Jacksonville.
Novack, Benjamin F., Capt., 1151 W. Adams St., Chicago.
O'Connell, W. M., Capt., Municipal Tuberculosis Sanit. Peoria.
Parrott, Elmer L., Capt., 102 N. Oak, Hinsdale.
Peterson, Arthur K., Lt. Col., 8215 Carpenter St., Chicago.

Illinois—Continued

Phillips, William P., Capt., 7100 N. Washtenaw, Chicago.
Plaut, Julian L., Capt., 5100 Kimbark Ave., Chicago.
Prusait, Walter, 1st Lt., 1006 Dobson St., Evanston.
Pummer, Lewis R., Capt., 2041 Morse Ave., Chicago.
Raber, Paul A., 1st Lt., 1109 S. Linden, Normal.
Reynolds, Robert L., Lt. Col., 1015 S. 4th Avenue, Maywood.
Roane, Robert D., Capt., Carlyle.
Rosenthal, Morris M., Capt., 6500 W. Irving Park Rd., Chicago.
Rubenstein, Hyman I., Capt., 5718 N. Christiana Ave., Chicago.
Sazma, Russell J., Capt., 5353 S. California Ave., Chicago.
Schertz, Truman B., Capt., RFD 1, Roanoke.
Schultz, Abraham, Major, 2140 N. Kedzie Ave., Chicago.
Schwartz, Isadore, 1st Lt., Saunemin.
Slattery, James T., Capt., 1140 Berwyn Ave., Chicago.
Snavely, John R., Capt., 401 Second Ave., Sterling.
Stulik, Lincoln, Capt., 943 Forest Ave., River Forest.
Sullivan, Ralph D., Major, 1420 W. 72d Pl., Chicago.
Tobias, Milton R., Capt., 4856 N. Ridgeway, Chicago.
Tobin, Walter W., Capt., 188 W. Randolph St., Chicago.
Wajay, Louis A., Capt., 3040 N. Cicero Ave., Chicago.
West, Stephen L., Capt., 5427 University Ave., Chicago.
White, Noland W., Major, 2a N. Douglas Ave., Belleville.
Williams, Francis R., Major, 4722 Greenwood Ave., Chicago.
Zurawski, Walter F., Capt., 1106 N. Monticello Ave., Chicago.

Indiana

Albright, Victor F., 1st Lt., 2258 N. Meridian, Indianapolis.
Beetem, Luther F., Capt., 411 N. Broadway, Madison.
Covell, Harry M., Lt. Col., 903 N. Main St., Auburn.
Daley, Edward H. Jr., Capt., 1710 Indiana Ave., LaPorte.
Dintaman, Paul G., Capt., Indianapolis City Hosp, Indianapolis.
Earhart, Henry T., Capt., 402 N. Meridian, Indianapolis.
Fender, Asa H., Capt., Worthington.
Green, Charles E., Capt., 138 N. Vine St., Plainfield.
Hatfield, Nicholas W., Major, 3850 Guilford Ave., Indianapolis.
Iterman, George E., Lt. Col., 1319 Church St., New Castle.
Keseric, Nicholas E., Major, 551 Taft St., Gary.
Lee, Glen W., Lt. Col., Methodist Episcopal Hosp., Indianapolis.
Lester, Louis J., Capt., 960 Locke St., Indianapolis.
McClure, David N., Capt., 2308 I St., Bedford.
Marshall, A. L., Major, 3444 N. Pennsylvania St., Indianapolis.
Mulcahy, Bernard J., Capt., 214 S. Manning Ave., Muncie.
Nelson, Richard B., Capt., 6741 Hohman Ave., Hammond.
Oswalt, James T., Capt., Stewart Apts., Dunkirk.
Poland, Maynard F., Capt., 612 Berkley Rd., Indianapolis.
Rhea, Gilbert D., Capt., 126 E. Washington St., Greencastle.
Ross, Alexander T., Major, 4710 Hinesley Ave., Indianapolis.
Sharp, William L., Major, Country Club Estates, Anderson.
Slaughter, Earl C., Capt., 418 Calumet Bldg., Hammond.
Spalding, Wendell L., Lt. Col., 617 Webster St., Mishawaka.
Stamper, Lucian A., Capt., 420 S. 22d St., Richmond.
Swets, Edward J., 1st Lt., 925 175th Pl., Hammond.
Uhrich, John H., Major, 1120 Clay St., Ft. Wayne.
Watson, Herman L., Major, 2021 E. Franklin St., Evansville.

Iowa

Anneberg, Adrian R., Capt., 1332 N. Carroll St., Carroll.
Balzer, Walter J., Capt., 222 Essex Lane, Davenport.
Burke, Jerome C., Capt., Woodlands, Clinton.
Cornell, Dale D., Lt. Col., Greenfield.
Fenton, Charles D., Capt., Bloomfield St., Bloomfield.
Fourt, Arthur S., Lt. Col., 12 W. Park Road, Iowa City.
Gamet, Elmo E., Major, Lamoni.
Johnstone, Alexander A., Col. 518 N. 4th Ave., Keokuk.
Koehen, Gerald F., Major, Univ. Hosp., Iowa City.
Korfmacher, Edwin S., Capt., 1327 Main St., Grinnell.
Lorfeld, Gerhard W., Capt., 1105 W. Locust St., Davenport.
Martin, Lowell E., Capt., Main St., Hamburg.
Moerke, Robert F., Major, Medical Arts Bldg., Burlington.
Paulus, James W., Capt., 595 Alta Vista, Dubuque.
Schueller, Charles J., Capt., R.R. 1, Asbury Road, Dubuque.
Sedlacek, Leo B., Col., 412 19th St., SE, Cedar Rapids.
Stearns, Alexander B., Major, 805 Equitable Bldg., Des Moines.
Sunderbruch, John H., Capt., 2246 W. Third St., Davenport.
Wainwright, Maxwell T., Capt., Mapleton.

Kansas

Cheney, Ralph E., Major, 200 W. Park Lane, Salina.
Davis, Paul E., Capt., Box 589, Larned.
Knappenberger, Roy C., Jr., Major, Penalosa.
Lafene, Benjamin W., Capt., 805 Elm St., Marysville.
Marshall, Malcolm Y., Major, Wadsworth.
Neighbor, Ernest G., Capt., 2245 Fieldston Rd., Kansas City.
Ortman, Gareth S., Lt. Col., Otego.

PHYSICIANS SEPARATED FROM SERVICE

Louisiana

Beranger, E. J., Major, 2005 Elysian Fields Ave., New Orleans.
Byron, Robin A., Major, Charity Hospital, New Orleans.
Grant, George B., Lt. Col., 1328 Webster St., New Orleans.
Healy, Thomas J., Capt., 1108 Jahncka Ave., Covington.
Johnson, Trois E., Capt., Pollock.
Leidenheimer, Henry Jr., Major, 9135 Heaton St., New Orleans.
McCord, William M., Major, 3949 La. Ave. Pky., New Orleans.
MacNamara, Homer P., Col., 1722 Albert St., Alexandria .
Nadler, Carl S., Jr., Major, Plaquemine.
Ogden, Frederick W., Capt., 1925 Gen. Pershing St., New Orleans.
Phillips, Benjamin J., Major, Huey Long Hospital, Pineville.
Robinson, Robert H., Capt., Box 303, Franklin.
Scott, Wood H., Capt., Bonita.
Speer, Seals S., 1st Lt., PO Box 217, Ringgold.
Thomas, Orville C., Capt., 102 Hundon St., Shreveport.
Tritico, Joseph J., Capt., Charity Hospital, New Orleans.
Williams, John W. Jr., Major, 2455 Alma St., Alexandria.
Winters, Allen C., Major, Vet. Facility, Alexandria.

Massachusetts

Abdu, Louis, Capt., 64 Provost, Brockton.
Allegree, Walter J., Capt., 1783 Mass. Ave., Cambridge.
Barron, Louis E., Major, 101 N. Common St., Lynn.
Bauer, Walter, Col., Mass. General Hospital, Boston.
Beigelman, Herman, Capt., 36 Quincy Ave., E. Braintree.
Brewster, Henry H., Major, 503 Washington St., Brookline.
Brown, Albert A., Major, 14 Shepard Pl., Lynn.
Casey, David T., Major, 131 Putnam Ave., Cambridge.
Chase, John S., Capt., 21 Newton St., Brockton.
Colokathis, Paul P., Capt., City Hospital, Worcester.
Condon, Robert V., Capt., 44 Westbourne St., Boston.
Connolly, Richard F., Capt., 25 Conant, Danvers.
Davis, Albert I., Capt., 191 Sea St., Quincy.
Downing, William M., Capt., % Claude B. Cross, Tremont Bldg., Boston.
Doyle, Bernard J., Capt., 19 Clarke Ave., Northampton.
Eppinger, Eugene C., Col., 71 Griggs Road, Brookline.
Fienberg, Robert, Lt. Col., Westfield State Sanat., Westfield.
Finnin, John J., Capt., 47 Forest St., Medford.
Fitzgerald, Edward F., Capt., 170 Bowdoin St., Dorchester.
Flaschner, Ira, Capt., Pocasset.
Glenn, William W. L., Capt., Mass. Gen. Hosp., Boston.
Goldberg, Irving E., Capt., 28 Warren Ave., Chelsea.
Gorney, Arthur J., Capt., 232 Foster St., Brighton.
Greene, William A. Jr., Major, Sutton Ave., Oxford.
Hadden, Frederick C., Capt., 5 Shattuck St., Natick.
Hagopian, Peter B., Major, Danver State Hosp., Hathorne.
Helfrich, William R., Capt., 166 Wash St., Quincy.
Holden, Eugene M., Capt., 86 N. Pleasant St., Amherst.
Hormell, Robert S., Capt., 686 Massachusetts Ave., Boston.
Howard, Ernest B., Major, 30 Wiley Rd., Belmont.
Jolma, Keijo K., Capt., 86 Johnathan St., Gardner.
Kaplan, Louis S., Capt., Beach Rd., Salisbury.
Keith, Theodore K., Major, 47 Grafton St., Newton Centre.
Kingsbury, Curtis B., Lt. Col., 63 Prospect St., Taunton.
Lavoie, Robert J., Capt., 170 Dana Ave., Worcester.
Leavitt, Abraham C., Capt., 350 Broadway, Everett.
Lewis, Frank E., Lt. Col., 30 Centre St., Nantucket.
Lief, Philip A., Capt., 29 Brookledge St., Roxbury, Boston.
Lorimer, Robert V., Capt., 333 Longwood Ave., Boston.
Loth, Eric C., Capt., 28 Montebello Rd., Jamaica Plain.
Martinson, Melvin S., Capt., 468 Main St., Action.
Mead, Sedgwick, Major, Mass Gen. Hosp., Boston.
Meline, David I., 1st Lt., 72 Maywood St., Roxbury.
Morse, Lawrence S., Capt., 73 Thatcher St., Brookline.
Neff, Richard S., Capt., Children's Hospital, Boston.
Nichols, Andrew III, Major, 10 Berry St., Danvers.
Noonan, John P., Capt., 15 Allen St., Brockton.
Ober, Robert E., Capt., 1716 Cambridge St., Cambridge.
O'Brien, Frederick F., Major, 3 Highland Park, Cambridge.
Paget, John F., Major, 16 Napleton St., Brighton.
Pease, Horace B., Maj., 118 Westmoreland Ave., Longmeadow.
Perry, Thomas F., Capt., 234 Commercial St., Provincetown.
Porter, Reno R., Lt. Col., 61 Sumner Road, Brookline.
Potter, William H., Capt., 39 Kirkland St., Cambridge.
Quigley, Thomas J., Capt., 1633 Tremont St., Boston.
Rosenthal, Arthur O., Capt., 85 Main St., N. Adams.
Ross, Frederick P., Capt., Peter Bent Brigham Hosp., Boston.
Russell, Donald H., Major, 33 Sutton St., Peabody.
Rust, Jesse A., Jr., Capt., Boston City Hosp., Boston.
Saperstein, Hyman I., Capt., 606 Main, Malden.
Schillander, Carl A., Lt. Col., 88 Maple St., Springfield.
Shinberg, John D., Capt., 38 Lakeview Ave., Haverhill.

Massachusetts—Continued

Simon, Norman, Capt., 9 Logan St., Lawrence.
Stillman, James S., Jr., Lt. Col., 164 Elgin St., Newton Centre.
Stone, Simon, Capt., 169 Columbia Rd., Dorchester.
Sullivan, Edward M., Capt., 528 Broadway, Chicopee Falls.
Tiede, Joseph W., Lt Col., 18 School St., Dedham.
Velona, Bruno, Capt., 519 Main St., Medford.
Wantman, Bernard I., Capt., 771 Broadway, Somerville.
Yood, Alfred, Capt., 390 Massachusetts Ave., Arlington.
Young, Leo A., Capt., 32 Prichard St., Fitchburg.
Zalvan, Jacob, 1st Lt., 175 Exchange, Millis.

Michigan

Albi, Raphael W., Major, Lake City.
Andries, Raymond M., Capt., Receiving Hospital, Detroit.
Barstow, Donald K., Capt., 215 Saginaw Ave., St. Louis.
Borgman, Wallace, Capt., 832 Ashley Dr., Kalamazoo.
Chynoweth, William R., Major, 207 Post Bldg., Battle Creek.
Clausen, Claire H., Capt., Gladstone.
Feigelman, Meyer J., Major, 2715 Richton St., Detroit.
French, Adam J., Lt. Col., 1332 Geddes St., Ann Arbor.
Frisch, Arthur W., Capt., 1130 Holcomb Ave., Detroit.
Gourley, Eugene V., Major, 19901 Littlefield, Detroit.
Hersee, William E., Capt., 306 S. College, Mt. Pleasant.
Howell, Roderic B., Major, 1611 Wells St., Ann Arbor.
Kay, Harry H., 1st Lt., 18201 Santa Rosa, Detroit.
Leland, Sol, Major, 1526 Taylor St, Detroit.
Longyear, Harold W., 1st Lt., 10943 Longview Ave., Detroit.
Markley, John M., Capt., 81 Dwight St., Pontiac.
Mitchell, Wilfrid B., Capt., 2245 N. LaSalle Gardens, Detroit.
Noer, Rudolf J., Lt. Col., 1512 St. Antoine St., Detroit.
Paine, Emory M., Capt., 433 Sixth St., Traverse City.
Rau, Frederick W., 1st Lt., 1102 Federal Ave., Saginaw.
Rubinfeld, Samuel H., Capt., Ontonagon.
Smith, Lewis L., Capt., 73 W. Chicago, Coldwater.
Sprunk, Carl J., Major, 12629 Wyoming Ave., Detroit.
Tenaglia, Thomas A., Capt., 3586 S. Liddesdale, Detroit.
Trombley, Joseph J., Major, 19000 Puritan Ave., Detroit.
Weston, Horace Lynn, Major, 18923 Strathmoor, Detroit.
Wienczewski, Theophila W., Capt., 132 Oldfield St., Alpena.

Minnesota

Anderson, David P. Jr., Major, 209 W. Mill St., Austin.
Anderson, Gaylord W., Lt. Col., 2261 Folwell St., St. Paul.
Branham, Donald S., Lt. Col., 1502 Wedge St., Albert Lea.
Brigham, Charles F. Jr., Capt., 426 3rd Ave., S., St. Cloud.
Brown, Walter E., Jr., Major, Mayo Foundation, Rochester.
Burns, Herbert A., Major, 3325 S. 1st Ave., Minneapolis.
Garetz, Michael A., Capt., 1106 Knox Ave., N. Minneapolis.
Gray, Robert F., Capt., Marshall.
Hench, Philip S., Col., 517 Fourth St., S.W., Rochester.
Jacobson, Wyaman E., Major, 5249 Columbia Ave., Minneapolis.
Joffe, Harold H., Capt., 1718 E. 7th St., Duluth.
Jones, Herbert W. Jr., Major, 3300 Fremont Ave., S., Minneapolis. (Legal Res.—133 E. Ave., Quincy, Ill.).
Krieser, Albert E., Capt., 1211 N. 4th St., Mankato.
Larson, Evrel A., Major, Minn. Univ. of., Minneapolis.
Lovelady, Sim B., Lt. Col., 1344 2nd St., NW, Rochester.
Mattson, Albert D., Capt., Atwater.
Noonan, Wm. J., Lt. Col., 2211 Kenwood Pkwy., Minneapolis.
Olson, Grant E., Capt., West Concord.
Peterson, Wendell G., Major, 621 2nd St., SW, Rochester.
Pewters, John T., Capt., 1835 Kenwood Parkway, Minneapolis.
Pumala, Ervan E., Major, 1 E. Sixth St., Duluth.
Schmidt, Herbert W., Major, 204 14th St., N.E., Rochester.
Shapiro, Jesse, Major, 952 Goodrich Ave., St. Paul.
Tuohy, Edward B., Major, 422 Fifteenth Ave., S.W., Rochester.
Twyman, Richard A., Capt., 609 7th Ave. S.W., Rochester.
Watson, William J., Major, Holdingford.

Missouri

Banet, Samuel R., Capt., 738 DeMun, St. Louis.
Berman, William, Capt., 7331 Delmar Blvd., St. Louis.
Cutler, Harold M., Capt., Barnes Hospital, St. Louis.
Damron, Edward O., Capt., Elsberry.
Feltz, Lawrence W., Capt., 621 St. Joseph St., Perryville.
Hufnagel, Charles J., Lt. Col., 819 Linwood, Excelsior Springs.
Imperatrice, Joseph F., Capt., State Hospital 1, Fulton.
Jones, Asa C. Jr., Capt., Kansas City Gen. Hosp., Kansas City.
McAdam, Charles R., Major, 513 Country Club Dr., St. Louis.
Quarles, Edgar B., Major, 1028 Claytonia Terr., Richmond Hts.
Ray, Richard H., Lt. Col., Willow Springs.
Rose, Ralph J., Capt., 3602½ Benton Blvd., Kansas City.
Seddon, John W., Capt., 5341 Waterman Ave., St. Louis.
Silsby, Don H., Col., 326 Landers Bldg., Springfield.

PHYSICIANS SEPARATED FROM SERVICE

New Jersey

Abarbanel, Milton G., Capt., 95 Grant Ave., Jersey City.
Albano, Frank J., Capt., 535 N. 7th St., Newark.
Bedrick, John J., Lt. Col., 41 E. 45th St., Bayonne.
Bergsma, Daniel, Lt. Col., 513 W. Broadway, Paterson.
Bloomenthal, Sanford R., Major, St. Francis Hosp., Trenton.
Byck, Louis, Capt., 794 S. 11th St., Newark.
Carrigan, Francis P., Lt. Col., 516 Prospect St., Maplewood.
Cotton, Henry A. Jr., Lt. Col., N. J. State Hosp., Trenton.
Coughlin, Joseph J., Capt., 840 Queen Ann Road, Teaneck.
Cross, Richard J., Capt., PO Box 246, Bernardsville.
Danielson, John J., Capt., 4703 Tonnelle Ave., North Bergen.
Del Negro, Albert E., Lt. Col., 402 Roseville Ave., Newark.
Dengrove, Edward, Capt., 85 Stevens Ave., Jersey City.
Dicker, Howard E., Major, 78 Main St., South River.
Di Norcia, Joseph, Capt., 357 3rd Ave., Newark.
Erber, Leonard B., Capt., 116 S. Raleigh Ave., Atlantic.
Faber, Edward, Capt., 154 Bergen Ave., Jersey City.
Faison, Jere B., Capt., PO Box 51, Manasquan.
Feldman, Matthew, Capt., 85 Renner Ave., Newark.
Flood, William A., Major, Vet. Adm. Facility, Lyons.
Frazee, William H., Jr., Capt., 513 Main St., Toms River.
Greene, Harry, Major, 90 Duncan Ave., Jersey City.
Holtz, Harry M., Capt., 299 Clinton Ave., Newark.
Howell, Thomas W., Major, 292 Springdale Ave., East Orange.
Koerber, George, Major, 136 Prospect St., Passaic.
Kratka, William H., Capt., 123 N. Pearl St., Bridgeton.
Krug, Alfred J., Capt., 217 Jacoby St., Maplewood.
Law, Harrison E., Major, 317 Harrinton Ave., Closter.
Levitas, Irving M., Capt., 24 Lyon Place, Westwood.
Lipshutz, Charles, Major, 820 Ave. C., Bayonne.
McCluskey, Harry B., Capt., Whippany Road, Whippany.
MacDonald, Kenneth G., Capt., 179 Wash. Ave., Clifton.
McGuire, John J., Major, Gould Ave., Newark.
Morrow, Joseph L., Capt., 56 Ridge Rd., Lynhurst.
Mulligan, Luke A., Lt. Col., 230 Central Ave., Leonia.
Murray, Edwin N., Lt. Col., 558 Newton Ave., Camden.
Nyvall, Pierre J., Capt., 4 S. Main St., Barnegat.
Pallante, Samuel, 1st Lt., 530 Highland Ave., Westville.
Peck, Eleanor K., Capt., 48 Edgemont Rd., Montclair.
Peimer, Ralph, Capt., 388 E. 26th St., Paterson.
Pugh, Thomas F., Major, 135 E. Central Avenue, Moorestown.
Reilly, Thomas F., Capt., 127 Union Ave., Clifton.
Rosen, Sol, Capt., 214 N. Second St., Millville.
Rosenberg, Louis, Capt., 26 S. Stanton Pl., Atlantic City.
Schneiderman, Benjamin I., Capt., South River.
Schwartz, Leo, Capt., 328 Harrison St., Passaic.
Sirotta, Ezra B., Capt., 220 W. Broad St., Paulsboro.
Sperling, Walter J. Jr., Capt., 29 Oxford St., Montclair.
Stouter, Francis L., Capt., 29 17th Ave., Paterson.
Sutnick, Theodore B., Capt., 21 Richey Pl., Trenton.
Talmage, William G., Capt., Succasumna.
Thron, Leopold E., Capt., 586 E. 29th St., Paterson.
Viteri, Luis E., Major, 214 High St., Mount Holly.
Wren, James C., Capt., Haworth.

New York

Abramson, Jacob, Capt., 7802 4th Ave., Brooklyn.
Agatston, Howard J., Major, Kings County Hospital, Brooklyn.
Alters, Irwin, Major, 975 Walton Ave., New York.
Altman, David, Capt., Ocean Ave., Massapequa.
Altman, Leon L., Major, Stony Lodge, P.O. Box 190, Ossining.
Aronson, Philip, Major, 124 Tapscott St., Brooklyn.
Attie, Joseph N., 1st Lt., 2165 63rd St., Brooklyn.
Baird, Nolan H., Lt. Col., 745 E. Post Road, Mamaroneck.
Ball, Robert P., Lt. Col., 622 W. 168th St., New York.
Bauer, David W., Capt., 1012 Ocean Ave., Brooklyn.
Beery, Edwin N., Lt. Col., 96 Remsen St., Brooklyn.
Bennett, Scott L., Major, 109 Hawthorne St., Brooklyn.
Berg, Howard W., Major, 216 Lenox Ave., Albany.
Black, Maurice M., Capt., 1730 E. 7th St., Brooklyn.
Blauner, Stuart S., Capt., 94 Greenridge Ave., White Plains.
Bond, Philip, Capt., 81 Ocean Parkway, Brooklyn.
Boright, Melvin T., Capt., 263 Northern Blvd., Albany.
Brannan, Gordon R., Capt., 47 Lake Ave., Middleton.
Brenner, Joel J., Capt., 1416 Carroll St., Brooklyn.
Broad, Monroe M., Major, 87-11 150th St., Jamaica, L. I.
Brodey, Adrian, Major, 82 Carlton Ave., Far Rockaway.
Burson, Leonard C., Major, 228 Beach 123 St., New York.
Buscicchi, Emile J., Capt., Sheridan Ave., Congers.
Byron, Raymond J., Major, Maple Terrace, Philmont.
Carr, Frederick S., Major, 17 Pearl St., Kingston.
Church, Gerald T., Major, 677 Onondaga, Syracuse.
Ciofalo, Frank I., Major, 226 E. 15th St., New York.
Cohen, Nathaniel A., Major, 1280 E. 18th St., Brooklyn.
Colbert, Robert M., Lt. Col., 152 W. 58th St., New York.
Colmer, Malcolm L., Major, 200 W. 86th St., New York.
Coren, Malvin M., Capt., 2390 Tiebout Ave., Bronx.
Corwith, Arthur E., Major, Hildreth Lane, Bridgehampton.
Coutts, Malcolm B., Major, 591 Palisade Ave., Yonkers.
D'Amato, G. R., Capt., 26 Aberdeen Road, New Hyde Park.
Damond, Joseph L., Lt. Col., 140 W. 58th St., New York.
Derrick, Eugene D., Capt., 25 Crestmont Rd., Binghamton.
DeSando, Carl J., 1st Lt., 1095 Ridge Wood West, Rochester.
DiFiore, Joseph C., Major, 2200 E. Tremont Ave., New York.
Dobrak, Alfred H., Capt., 31 Oberlin St., Buffalo.
Donovan, Eugene T., Capt., 265 Parkside Ave., Buffalo.
Doskof, Samuel W., 1st Lt., 12 South Drive, Great Neck.
Drayer, Carl, Capt., 350 Lefferts Ave., Brooklyn.
Dworin, Morris, Capt., 741 Fairmount Place, Bronx.
Edwards, Aaron R., Capt., 110 Heights Ct., Ithaca.
Eisenstat, Max, Lt. Col., 1749 Grand Concourse, New York.
Eisenstein, Henry, Major, 2102 E. 36th, Brooklyn.
Elkind, Mortimer M., Capt., 634 Empire Blvd., Brooklyn.
Engelhart, Ferdinand K., Capt., 28 Oak Lane, Trenton.
Evans, Alexander L., Capt., 2865 W. 20th St., Brooklyn.
Farbman, Meyer David, Capt., 800 Fordham St., Bronx.
Feingold, Abraham, Lt. Col., 1566 40th St., Brooklyn.
Feinstein, Morris, Capt., 2850 Claflin Ave., Bronx.
Fischer, Isidore, Major, 1515 Macombs Road, Bronx.
Flamberg, Ira W., Capt., 81 S. Clinton Ave., Bay Shore.
Flynn, William V., Capt., 469 Hudson Ave., Albany.
Foley, Edwin J., Capt., 80 Cranberry St., Brooklyn.
Frohman, Albert, Capt., 90-28 212th St., Queens Village.
Gabriele, Domenic J., Capt., 88-30 62nd Drive, Rego Park, L. I.
Gallo, Frank A. R., Major, 6816 16th Ave., Brooklyn.
Gendel, Edward, Capt., 41 W. 82d St., New York.
Gershman, Maurice, Major, 906 1st Court, Brooklyn.
Gilbert, Sidney B., Capt., 349 E. 19th St., Brooklyn.
Gitzelter, Irving I., Capt., 452 Seneca Ave., Brooklyn.
Goetzman, Arthur C., Major, 8907 Hannepin, Niagara Falls.
Goldberg, Moe A., Capt., 1212 Grant Avenue, Bronx.
Gorlin, Philip S., Capt., 130-01 Lefferts Blvd., Ozone Park.
Greenberg, Joseph H., Capt., 234 Lefferts Ave., Brooklyn.
Gueft, Boris, Capt., 276 Riverside Dr., New York.
Gurian, Sydney H., Capt., 1 E. 105th St., New York.
Hass, Nathan H., Capt., 2249 E. 21st St., Brooklyn.
Heldt, John H., Capt., 876 Central Ave., Woodmere.
Hillyer, Robert A., Major, Kings County Hospital, Brooklyn.
Hoffman, Edward S., Capt., 557 Hazelwood Terrace, Rochester.
Ingrisano, Louis A., Capt., 142 Somers St., Brooklyn.
Isaacson, Edwin, Capt., 1884 Arthur Ave., Bronx.
Jaroszewicz, Anthony G., Capt., 624 Henry St., Utica.
Johnson, William W., Lt. Col., 79 Court St., Plattsburg.
Jordan, Fred A. Jr., Capt., 5 River St., Cortland.
Kaback, Erwin R., Capt., 7 Montgomery St., Middletown.
Kauer, George L., Jr., Major, 230 E. 71st St., New York.
Keegan, Edward J., Major, 330 Main St., Oneonta.
Klein, Samuel M., Major, 35-61 87th St., Jackson Heights.
Klimow, Nicholas I., Major, 103 Adams Ave., Johnson City.
Kwit, Nathaniel T., Major, 1075 Grand Concourse, New York.
Lang, Leonard C., Major, 400 Forest Ave., Buffalo.
Leachman, John W., Lt. Col., Pavilion.
Lebowitz, Jerome H., Capt., 800 E. 175 St., New York.
Levitan, Morton E., Capt., 238 Watjean Court, Far Rockaway.
Lippman, Richard W., Major, 310 E. 55th St., New York.
Lo Re, Alexander S., Capt., 2365 Dean St., Brooklyn.
McCaffren, Lawrence E., Capt., 20 Girton Pl., Rochester.
Maislen, A. A., Capt., 92-11 35th Ave., Jackson Heights, L. I.
Malko, Michael G., Capt., 164 N. 6th St., Brooklyn.
Mechaneck, Isidore, Capt., 41-47 56th St., Woodside.
Meigher, S. C., Major, N.Y. Hosp., 525 E. 68th St., New York.
Metzger, William R., Major, 2706 Avenue R, Brooklyn.
Meyer, Nathan, Capt., 106 Ft. Washington Ave., New York.
Miller, Meyer G., Capt., BX 901, Tupper Lake.
Millman, Louis J., Capt., 2350 Creston Ave., New York.
Moll, Frederick C., Capt., 2057 East Ave., Rochester.
Mondelli, Mario Angelo J., Capt., 366 Broome St., New York.
Moskowitz, Eugene, Capt., 220 N. Columbus Ave., Mt. Vernon.
Mullen, Aloysius J., Capt., 4966 Broadway, New York.
Nachtigall, Henry B., Capt., 2390 Tiebout Ave., Bronx.
Nelson, Irving, Lt. Col., 1104 Avenue L, Brooklyn.
Norins, Howard, Capt., Metropolitan Hosp., Welfare Island.
O'Brien, John J., Major, 30-11 Murray Lane, Flushing.
Oehler, Harry R., Capt., 546 Woodlawn Ave., Buffalo.
Ogilvie, John B., Major, 405 E. 72d St., New York.
Orlando, Lorenzo, Capt., 2746 Matthews Ave., Bronx.
Palamar, Michael, Capt., 84 W. John St., Little Falls.
Peckins, Herman, Capt., 1307 Sheridan Ave., New York.

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Pemsler, Abraham B., Major, 1840 Grand Concourse, Bronx.
Penn, Louis, Capt., 1718 Crotona Park East, Bronx.
Post, Arthur, Major, 2 East 85th St., New York.
Powell, John H., Capt., 24 Ascan Avenue, Forest Hills.
Pschierer, Francis Marie J., Capt., 361 Porter Avenue, Buffalo.
Pyle, Emmord V., Capt., 5 Orchard St., Middletown.
Reiger, Anthony C., Major, 135 Puritan Ave., Forest Hills.
Richman, Samuel, Major, 1049 Park Ave., New York.
Roemer, Edward P., Major, 77-20 Austin St., Forest Hills.
Root, Nathan N., Major, 135-48 77th Ave., Kew Gardens.
Rothstein, David, Capt., 35-46 74th St., Jackson Heights.
Ruby, Nathan, Capt., 1331 E. 19th St., Brooklyn.
Russell, Nelson G., Major, 135 Linwood Avenue, Buffalo.
Sabin, Anthony G., Major, 200 Mosholu Parkway South, Bronx.
Scheremeta, William W., Major, 45-38 42nd St., Sunnyside.
Schiffer, Ira L., Capt., 15 Featherbed Lane, Bronx.
Scuccimarra, David J., Capt., 618 South St., Peekskill.
Serio, Joseph C., Capt., 92 Fargo St., Buffalo.
Shay, William A., Capt., 109 N. Main St., Cortland.
Siegel, Solomon, Capt., 1784 Bryant Ave., Bronx.
Slovak, Joseph, Capt., 12 Union St., Schenectady.
Smith, Charles M., Capt., 128 E. Main St., Waterloo.
Solomon, Sydney, Major, 414 Brook Ave., New York.
Sperrazza, Augustine J., Capt., 2115 24th Ave., Astoria.
Stanford, Henry J., Capt., 69-10 Yellowstone Blvd., Forest Hills.
Tatkow, Nathaniel, Capt., 630 Avenue M, Brooklyn.
Tausend, Milton E., Capt., 111-23 76th Rd., Forest Hills.
Throne, Harry M., Capt., 1385 Shakespeare Ave., New York.
Till, Solomon, Capt., Broadway, Port Ewen.
Tosti, Vincent G., Major, 60-29 Putnam Ave., Ridgewood.
Touroff, Arthur S. W., Lt. Col., 1192 Park Ave., New York.
Tryka, Bruno J., Major, 43 N. Main St., Perry.
Urbont, Alex. R., Capt., 783 Beck St., New York.
Venet, Louis, Major, 96 E. 208 St., New York.
Warnock, George H., Capt., 216 Putnam Ave., Freeport.
Werner, Irving, Major, 112 Murray St., Binghamton.
White, John D., Capt., 48 Bellwood Pl., Rochester.
Zeman, Michael S., Capt., 12 E. 97th St., New York.
Zipser, Frederick S., Capt., 168-04 35th Av., Flushing.

Ohio

Anderson, John G., Major, Broadway, Lynchburg.
Arn, Roy D., Lt. Col., 258 Greenmont Blvd., Dayton.
Beers, George W., Capt., 2020 Mahoning Rd., Canton.
Behm, Alton W., Capt., 112 South St., Chardon.
Boukalik, William F., Lt. Col., 20030 Scottsdale, Cleveland.
Braden, Spencer, Lt. Col., 1344 Hanna Bldg., Cleveland.
Callander, Adelbert R., Major, 62 N. Franklin St., Delaware.
Camp, Kenneth E., Capt., 2028 Felecia Ave., Youngstown.
Couch, Cleon C., Major, 2064 Adelbert Road, Cleveland.
Deitchman, Louis S., Major, 1841 Goleta Ave., Youngstown.
Egli, Edwin B., Major, 222 W. Lincoln Way, Lisbon.
Evans, Harrison S., Lt. Col., Worthington.
Feldman, Stanley L., Capt., 9409 Columbia Ave., Cleveland.
Foley, William T., Capt., 558 Howell Ave., Cincinnati.
Goldberg, Maurice E., Capt., 1434 Cory Drive, Dayton.
Goldin, Ralph R., Capt., 230 S. Cole St., Lima.
Hamsher, John F., Lt. Col., St. Paris.
Harkey, James M., Capt., 237 33d St., N.W., Canton.
Koeckert, Herbert L., Major, 17909 Landseer Road, Cleveland.
Kraus, Karl J, Capt., 4564 Paddock Rd., Cincinnati.
Langacher, Karl T., Capt., 606 Andover Rd., Mansfield.
Lapirow, Harry, Capt., 316 Hearne Ave., Cincinnati.
McCready, Robert G., Capt., 57 Grand Ave., Akron.
Mack, James R., Capt., Belvedere Bldg., Cincinnati.
Martin, George I., Lt. Col., Miami Valley Hosp., Dayton.
Meyer, Donald D., Capt., University Hospital, Columbus.
Moore, Samuel T., Capt., University Hospitals, Cleveland.
Oakes, Milton C., Major, 245 Delaware St., Lexington.
Ockington, James W., Major, 17000 Hilliard Rd., Lakewood.
Ostergard, Robert P., Major, University Hospital, Cleveland.
Pastor, Julius W., Capt., 3170 Ashwood Rd., Cleveland.
Pollack, Alexander, Capt., 391 Berkeley Road, Columbus.
Rossen, Joseph McK., Capt., 13813 Clifton Blvd., Lakewood.
Ruppersberg, Anthony Jr., Lt. Col., 2585 E. Main St., Columbus.
Sacks, Leon J., Major, 370 Bell St., Akron.
Skimming, Louis H., Capt., 2601 Central Ave., Middletown.
Sofranec, J. J. Jr., Capt., 118 Williamson Ave., Youngstown.
Sterne, Eugene H., Jr., Capt., 3645 Washington Ave., Cincinnati.
Tirey, James W., Capt., Anna.
Tramont, Charles B., Major, Route 1, Mt. Vernon.
Vinnedge, William F., Major, 738 Main St., Hamilton.
Vorhies, Gerald E., Capt., Scio.
Wadsworth, Francis M., Lt. Col., 57 S. Mulberry St., Mansfield.

Oklahoma

Anderson, Leighton L., Capt., 800 E. 13th St., Oklahoma City.
Barnes, Harry E., Capt., 541 SW 29th St., Oklahoma City.
Blair, Clifford J., Major, 3021 N.W. 15th St., Oklahoma City.
Borecky, George L., Capt., 2316 NW 16th St., Oklahoma City.
Bradley, Frank L., Capt., East. Okla. State Sanat., Talihina.
Brown, Spencer H., Capt., Fort Gibson.
Cunningham, Charles D., Lt. Col., 208 Park, Seminole.
Denyer, Hillard E., Major, 502 E. 11th St., Chandler.
Dorwart, Frederic G., Major, 1021 Elgin Ave., Muskogee.
Dube, Paul H., Capt., Shattuck.
Etter, F. S., Lt. Col., 504 Union Nat. Bank Bldg., Bartlesville.
Ewell, William C., Lt. Col., 216 E. 19th St., Tulsa.
Graham, John A., Capt., Univ. Hosp., 800 N.E. 13th, Oklahoma.
Howard, Robert B., Major, 1200 N. Walker, Oklahoma City.
Hubbard, Ralph W., Lt. Col., 1523 N.E. 9th St., Oklahoma City.
Kennedy, Louis J., Lt. Col., Charity Hosp., Clinton.
Kimball, George H., Lt. Col., 912 Med. Arts Bldg., Oklahoma City.
Kuhn, J. F., Jr., Major, 1102 Med. Arts Bldg., Oklahoma City.
Lester, Eugene F., Jr., 1st Lt., 736 N.E. 13th St., Oklahoma City.
Messinger, Robert P., Capt., 807½ N.W. 23d St., Oklahoma City.
Neff, Everett B., Capt., 909 N.W. 37th St., Oklahoma City.
Pearson, Daniel B., Jr., Capt., 1308 N. Hudson, Oklahoma City.
Raff, Joseph S., Major, Madill.
Reynolds, John H., Major, 605 E. Broadway, Muskogee.
Ritan, Andrew, Major, Tahlequah.
Sanger, Welborn W., Major, 380 Masonic Bldg., Ponca City.
Terry, John B., Capt., Key Bldg., Wewoka.
Toma, Paul, Capt., Granite.
Witten, Harold B., Capt., Harrah.

Pennsylvania

Adonizio, Anthony C., Major, 294 William St., Pittston.
Arnao, James, Capt., 2503 S. 62d St., Philadelphia.
Bavendam, Frederick A., Capt., 249 S. 41 St., Philadelphia.
Beck, Joseph R., Major, 5018 Saul St., Philadelphia.
Brubaker, Robert E., Major, 4501 Chester Ave., Philadelphia.
Buckland, Wilmer B., Major, 4406 Locust St., Philadelphia.
Campus, Joseph L., Capt., 3401 Englewood St., Philadelphia.
Combs, Peter S., Major, Phila. Gen. Hospital, Philadelphia.
Coppes, Charles Daniel, Capt., 421 Green Lane, Philadelphia.
Crowl, Edward C., Major, 38 W. Fourth St., Bloomsburg.
Davidson, Max, Capt., 4055 Perrysville Ave., Pittsburgh.
Devlin, Laurence P., Lt. Col., 4712 Richmond St., Philadelphia.
Di Silvio, Dominic N., Major, 4509 Stanton Ave., Pittsburgh.
Dunkelberger, J. A., Major, Grad. Hosp., 19 & Lombard, Phila.
Eddinger, Leo C., Major, 703 N. Fourth St., Allentown.
Finn, Joseph L., Major, 6118 N. Broad St., Philadelphia.
Fraley, Henry W., Major, 133 Main St., Leechburg.
Glocker, Rudolph K., Major, 701 Main St., Royersford.
Golove, Jacob, Major, 6418 Elmwood Ave., Philadelphia.
Greenfield, Alfred R., Capt., 127 7th St., McKeesport.
Hawkins, Walter D., Capt., 1005 N. 2d St., Harrisburg.
Hodgson, Eugene W., Major, Houston.
Hogan, Patrick J., Capt., 4524 N. 18th St., Philadelphia.
Horowitz, Jules J., Capt., 178 W. River St., Wilkes Barre.
Hudson, Victor T., Capt., St. Luke's Hosp., Bethlehem.
Javois, Alexander J., Lt. Col., U. S. Marine Hosp., Pittsburgh.
Johnson, Thomas U., Capt., 172 Congress St., Bradford.
Keithan, John F., Major, 33 W. Court St., Doylestown.
Klopp, John B., Lt. Col., 1810 Edgemont Ave., Chester.
Kohn, David F., Capt., 46 Fairview Ave., Mt. Pocono.
Lally, Francis L., Capt., 328 S. Third St., Sharpsville.
Livingood, Clarence S., Major, 4710 Locust St., Philadelphia.
Lowright, Wallace J. Jr., Capt., Center Valley.
McAndrew, Lorain A., Capt., 448 Main St., Vandling.
McCurdy, Dino E. P., Capt., 4636 Grant Ave., Philadelphia.
McMurray, John S., Capt., 415 E. Wheeling St., Washington.
Manges, John P., Major, Scotland.
Masters, Raymond E., Major, 1144 Broadway, East McKeesport.
Matthews, W. F. Jr., Major, Dorseyville Rd., Rt. 2, Sharpsburg.
Olmes, Frank S., Capt., 116 Center St., Orwigsburg.
Perloski, Leo, Capt., Washington St., Middleport.
Petropoulos, Peter C., Capt., 4629 Walnut St., Philadelphia.
Proudfit, James P., Capt., 143 N. Avenue, Washington.
Ravetz, Elkin, Capt., 1612 N. 30th St., Philadelphia.
Rosenfield, Richard E., Capt., 5721 Darlington Rd., Pittsburgh.
Ruder, Carl L., Lt. Col., 550 Westover Rd., Pittsburgh.
Seifert, G. L., Major, 2202 E. Cumberland St., Philadelphia.
Selsman, Joseph V., Capt., 54th & Irving Sts., Philadelphia.
Smith, Robert R., Capt., George School.
Taboroff, Leonard H., Capt., 4742 N. 8th St., Philadelphia.
Virusky, Edmund J., Capt., 1010 N. Center St., Freeland.
Watson, J. R., Lt. Col., Standish Road, Rosslyn Farm, Carnegie.

Cohen, Nathaniel A., Major, 1280 E. 18th St., Brooklyn.

Peckins, Herman, Capt., 1307 Sheridan Ave., New York.

PHYSICIANS SEPARATED FROM SERVICE

Rhode Island

Allen, Richard E., Major, 517 Pontiac Ave., Cranston.
Begg, Charles F., Capt., Rhode Island Hospital, Providence.
Bellaire, Richard P., Major, Rhode Island Hospital, Providence.
Dziob, John S., Major, 385 Ives St., Providence.
Gannon, Charles H., Lt. Col., 677 Broad St., Providence.
Grzbien, Stanley T., Capt., 206 Bellevue Ave., Providence.
Holdsworth, H., Capt., 299 Woonasquatucket Ave., N., Providence.
Kent, Joseph C., Major, 105 Fort Ave., Cranston.
Korb, Milton, Capt., 18 Larch St., Providence.
Possner, Howard E., Jr., Capt., 66 Kenyon Ave., Wakefield.
Sutch, Gabriel C., Capt., State Hosp. for Mental Dis., Howard.
Wittes, Saul A., Capt., 91 Great Road, Woonsocket.

South Carolina

Bickley, William E., Major, Box 26, Pendleton.
Folk, William H., Capt., 721 E. Main St., Spartanburg.
Howle, Myron G., Major, Summerton.
Miles, Louis S., Major, Box 24, Summerville.
Moorhead, William H., Major, Goldville.
Powe, Walker H., Jr., Capt., 405 Crescent Ave., Greenville.
Timmons, Thaddeus A., Lt. Col., Pamlico.

Tennessee

Bleecker, Phillip B., Major, 1011 N. Parkway, Memphis.
Bryan, Harry G., Capt., 706 S. Mansfield, Memphis.
Buchanan, Robert N., Jr., Major, Hendersonville.
Cook, William N., Capt., Columbia.
Didcoct, John W., Capt., 302 Caldwell Ave., Paris.
Evans, John W. Jr., Major, Bells.
Farrar, Taylor, Capt., RFD 7, Shelbyville.
Graham, James F., Capt., Scotts Hill.
Green, Arthur W., Major, 1725 Kansas St., Memphis.
Hamilton, John B., Lt. Col., 1123 Catawba St., Kingsport.
Henard, Carter Hal, Capt., Mosheim.
Howard, William T., Major, Covington.
Kennedy, John O., Capt., Rt. 6, Holston Hills, Knoxville.
Killebrew, Joseph B., Major, 226 Fleetwood Dr., Chattanooga.
Killeffer, John J., Major, Med. Arts Bldg., Chattanooga.
Kirtley, James A. Jr., Col., Woodlawn Drive, Nashville.
Lancaster, Augustus H, Lt. Col., 3495 Oak View Dr., Knoxville.
Leathers, James P., Capt., 1725 8th Ave., North, Nashville.
Mackey, William F., Capt., RFD #2, Whitwell.
Martin, William D., Capt., Route 6, Murfreesboro.
Moore, William S., Lt. Col., 1222 Union Ave., Memphis.
Morgan, Hugh J., Brig. Gen., Whitebridge Pike, Nashville.
Patterson, Russell H. Jr., Capt., 512 High St., Trenton.
Rogers, Benjamin C., Major, St. Thomas Hosp., Nashville.
Shipley, Alex B., Capt., 400 W. Hill Ave., Knoxville.
Smith, Joseph R., 1st Lt., 303 College St., Paris.
Strohmenger, Frank J., Lt. Col., Holston Valley Community Hospital, Kingsport.
Tullis, Isaac F., Jr., Major, 1285 Overton Park Ave., Memphis.
Tyson, William T., Jr., 1st Lt., 1707 Foster, Memphis.
West, Frederick, Capt., 3332 Kenilworth Drive, Knoxville.

Texas

Allin, Willis W., Lt. Col., 402 Garrity Road, San Antonio.
Armbrust, Charles A., Jr., Lt. Col., 3301 Junius, Dallas.
Blundell, James R., Col., 2220 Stanmore Dr., Houston.
Brasher, Ray V., Major, 112 Williamsburg Lane, Ft. Worth.
Bryant, George C. Jr., Major, Parkland Hospital, Dallas.
Burns, Robert B., Capt., Box 158, Giddings.
Carlson, Glenn D., Lt. Col., 8608 Inwood Road, Dallas.
Chandler, Edwin A., Major, Route 12, Box 321, Houston.
Davis, Charles Q., Lt. Col., 4107 Fannin St., Houston.
DePasquale, Francis L., Lt. Col., Vet. Adm. Center, Waco.
Edwards, Buell F., Capt., Johnson Bldg., Graham.
Elkins, Clyde F., Capt., 1803 13th St., Lubbock.
Frachtman, Hirsh J., Lt. Col., 5212 Caroline Blvd., Houston.
Green, John Leighton, Jr., Major, 3012 Silver St., El Paso.
Hawkins, Winfred W., Lt. Col., 2125 Morrow, Waco.
Heffner, Edward A., Major, 1101 N. Sylvania Ave., Ft. Worth.
Holley, Sion W., Major, 1625 S. Ninth St., Waco.
House, Royce E., Major, Baylor Hospital, Dallas.
Jones, Leonard B., Major, Box 605, Taft.
Jopling, Julian L., Major, 1107 Lake Drive, Taylor.
Kaplan, Hyman J., Lt. Col., Holland Bldg., Orange.
Kost, Louis B., Major, % Drs. Jinkins, 22d & I, Galveston.
Legg, Eugene P., Major, 3701 Maple, Dallas.
Lovelady, Roy R., Major, Santa Anna.
McClung, Hugh L., Capt., 7704 San Fernando Way, Dallas.
McIlhenny, W. I., Jr., 1st Lt., 218½ W. Woodlawn, San Antonio.
McKellar, Thomas F., Major, Pflugerville.
Mayo, Oscar N., Major, 2102 Elizabeth Drive, Brownwood.

Texas—Continued

Medford, Ulen G., Jr., Capt., 202 S. Raguet St., Lufkin.
Montgomery, William D., Major, Box 197, Thornton.
Morell, Willard B., 1st Lt., 106 W. Pecan St., San Antonio.
Neblett, Robert A., Capt., Canyon.
Novak, Lumir F., Major, 745 W. Houston St., San Antonio.
Ory, Lee K., Major, PO Box 110, Comanche.
Payne, Ralph B., Major, 211 Fisk Bldg., Amarillo.
Price, Enoch C., Capt., 1004 N. 34th St., Waco.
Reaves, Lovett M., Major, 4553 Bordeaux, Dallas.
Roosth, Harold, Major, Route 5, Tyler.
Rothe, Courand N., Major, 105 Adams St., San Antonio.
Salinger, Alfons, Capt., 3205 Fannin St., Houston.
Seastrunk, Oliver C., Lt. Col., Dechard Bldg., Franklin.
Stow, Robert C., Capt., 2811 Travis St., Fort Worth.
Tinterow, Maurice M., Capt., 1816 Ave. F, Galveston.
White, Louis L., Major, 1302 Rosemont St., Amarillo.
Wilson, Francis W., Lt. Col., Luling.
Yarbrough, Cecil G., Jr., Capt., 111 E. Michigan St., Midland.
Zedler, Garland G., Capt., 705 W. 21st St., Austin.

Utah

Cannon, Lawrence S., Capt., 29 S. State St., Salt Lake City.
Davis, Donald D., Lt. Col., 301 Judge Bldg., Salt Lake City.
Freeman, Ralph W., Major, Fillmore.
Jensen William E., Major, 1327 Roosevelt Ave., Salt Lake City.
Muir, Everett B., Major, 1408 Federal Way, Salt Lake City.
Phillips, Earl H., Capt., 1704 Harrison Ave., Salt Lake City.
Pugmire, Adrian S., Maj., 1703 Yalecrest Ave., Salt Lake City.

Virginia

Beavers, Charles L., Major, 410 Clay St., Franklin.
Buck, Frank N., Jr., Capt., 122 Florida Ave., Portsmouth.
Cline, Robert F., Capt., 618 Tennyson Ave., Winchester.
Ende, Milton, 1st Lt., 853 Commerce St., Petersburg.
Garnett, Alfred R., Capt., 526 Boissevain Ave., Norfolk.
Hamlin, Percy G., Lt. Col., State Hosp., Williamsburg.
Heilman, Elwood H., Capt., 1200 E. Broad St., Richmond.
Krapin, David, Major, 2115 Venable St., Richmond.
Lush, Lewis C., Major, 3610 Decatur St., Richmond.
Ransone, John T., Major, % W. R. Taylor, 138 Maneto Ave., Hampton.
Risher, John C., Major, Charlottesville.

Washington

Cole, Harold C., Major, 400 Boylston Ave., N., Seattle.
Davis, James V., Capt., Port Gamble.
Fairshter, Jacob J., Capt., Olympic Hospital, Forks.
Goiney, Bernard J., Capt., 517 9th Ave., Seattle.
Halvorsen, Clifford, Major, Steilacoom.
Link, Richard B., Lt. Col., 3312 N. 24th St., Tacoma.
Loree, David R., Lt Col., 212 W. 26th St., Vancouver.
Meier, Henry H., Capt., Route 8, Box 402AA, Tacoma.
Nichols, Erwin E., Capt., 919 South Lincoln, Port Angeles.
Olander, Carl W., Capt., Ellensburg.
Rankin, Francis W., Capt., 7914 Densmore, Seattle.
Rowe, Perry E., Capt., 2230 Harrison St., Everett.
Taylor, Edward D., Major, 403 N. Oak St., Centralia.
Watson, Wilbur E., Capt., 1833 38th Avenue, N., Seattle.
Young, Robert D., 1st Lt., 7624 E. Greenlake Way, Seattle.

West Virginia

Bertling, Marion H., Major, Box 295, McComas.
Hamilton, Richard, Major, 800 Second St., St. Mary's.
Jones, Ralph J., Capt., Bridgeport.
McClung, James R., Major, Shawnee Hills, Wheeling.
McCuskey, John F., Major, 605 Milford St., Clarksburg.
Myers, Junior W., Capt., Myers Clinic, Philippi.
Peskoe, Louis Y., Capt., Boomer.
Prioletti, Vincent, Capt., 305½ Main St., Weirton.
Shanes, Herbert N., Capt., Caretta.
Silverman, Mendel, Major, P.O. Box 904, Williamson.

Wisconsin

Babbitz, Albert L., Capt., 1962 W. Prospect Ave., Milwaukee.
Bach, Stanley M., Capt., 117 S. Butler St., Madison.
Goldstein, David N., Capt., 300 60th St., Kenosha.
Hagan, Robert K., Capt., Milwaukee Co. Hospital, Wauwatosa.
Kincaid, Charles K., Major, City Hall, Eau Claire.
McCabe, John O'D., Major, 208 E. Wisconsin Ave., Milwaukee.
Midelfart, Peter A., Major, 343 Gilbert Ave., Eau Claire.
Moffett, James L., Major, Montfort.
Schweiger, Lemont R., Capt., 1118 E. Glendale Ave., Milwaukee.
Thatcher, Donald S., Major, 2200 W. Kilbourn Ave., Milwaukee.
Weeks, Frank D., Major, 522 W. 2d St., Ashland.

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

California

Adams, John P.....Oakland
Agmar, Albert R.....San Francisco
Beahrs, Oliver H.....Pomona
Bear, Newman K.....Riverside
Bosshardt, Orval A.....Ontario
Branch, Charles H. H.....Pomono
Burnham, Clark J. Jr.....Berkeley
Cabell, Charles L.....Fresno
Charmak, David D.....San Francisco
Connell, De Bert W.....Berkeley
Daniels, Esli H.....Long Beach
Dahl, Clarence A.....San Pedro
Dewey, Earl T.....San Francisco
Diamond, Mortimer.....Los Angeles
Dress, Lawler A.....San Francisco
Dunlavy, Kenneth J.....Healdsburg
Eiskamp, Ehler H.....Watsonville
Fitzgerald, Charles E.....Long Beach
Flinn, Edward F.....San Francisco
Flanders, Howard B.....Walnut Creek
Ford, Theophilus F.....Ontario
George, Lewis C.....Los Angeles
Goddard, Wilson P.....Mill Valley
Groskloss, Howard H.....El Segundo
Hall, Samuel P.....San Francisco
Hayden, Charles T.....Oakland
Hearn, Thomas M.....Van Nuys
Hohnstein, Floyd I.....Oakland
Hollingsworth, John B.....Oakland
Johnson, Joseph D.....Taft
Johnson, Oscar D.....Los Angeles
Lancaster, George G.....So. Pasadena
Lane, Henry G.....Palo Alto
Leet, Robert S.....Oakland
Litterer, Ammon B.....San Diego
Lynch, John C. Jr.....Stockton
MacGregor, James W.....Coronado
Maner, George D.....Los Angeles
Maser, James F.....Fresno
McCleave, Thomas C. Jr.....Oakland
McGranahan, James H.....Long Beach
Michael, Michael T.....San Francisco
Miller, Herbert G.....Palo Alto
Najjar, Constantine C.....Merced
Nebeker, Don P.....Los Angeles
Olmsted, George S.....Del Mar
O'Neill, James N.....Los Angeles
Puttler, Oliver L.....San Lorenzo
Redfield, Robert L.....Berkeley
Rice, Frank M.....San Francisco
Richardson, George C.....Sonora
Ross, Verne R.....Stockton
Rouff, Elliot A.....Pasadena
Scarborough, Robert A.....San Francisco
Schaupp, Karl L. Jr.....San Francisco
Scovel, Ralph E.....San Francisco
Seeley, Phillip A.....Burlingame
Steiss, Charles F.....San Francisco
Stevens, George A.....Beverly Hills
Taylor, Leland H.....Oakland
Torre, Emile D.....San Francisco
Trotter, Joseph T. Jr.....Pasadena
Uldall, Jorgen J.....San Francisco
Vento, John P.....Los Angeles
Watson, Harold G.....San Francisco
Wightman, Ardath H.....Laguna Beach
Wright, Wesley M.....Los Angeles
Yuskis, Anton S.....San Diego

Connecticut

Apuzzo, Anthony A.....New Haven
Bassin, Alexander L.....Hamden
Bellew, Raymond F.....Bridgeport
Carson, Joseph P. Jr.....Hartford
Cenci, Vencent P.....Hartford
Hartman, Frederick B.....New London
Roos, Allan J.....Bridgefield
Rosenberg, Harold A.....New Haven
Sette, Alfred J.....Stamford
Weiselberg, Hyman M.....Waterbury

Florida

Barge, William J.....Miami
Bell, John D.....Pensacola
Bowen, Louis R.....Eustis
Butt, Thomas C.....Orlando
Cowart, James T.....Tampa
Dean, Abbot M.....Warrington
Dowlen, Leonidas W.....Miami
Farringer, Howard R. H.....Hollywood
Graves, Adoniram J.....Jacksonville
Gwathney, George T., Jr.....Orlando
Spicer, Robert T.....Miami

Illinois

Arnal, Paul J.....River Forest
Bailey, John M.....Evanston
Bauman, Lucian.....Chicago
Bengtson, Bengt N.....Maywood
Bonebrake, Harold V.....Chicago
Brotman, David M.....Chicago
Chern, Bernard V.....Chicago
Childs, Theron B.....Glencoe
Cohen, Bernard M.....Chicago
Croft, Joseph D.....Evanston
David, Charles B.....Chicago
Dehnert, Ernst F.....Chicago
Dostal, Lumir E.....Chicago
Draeger, Louis A. Jr.....Chicago
Dunn, Edward H.....Elgin
Ennis, Emery H.....Springfield
Forrest, Thomas F.....Woodstock
Fowler, John V., Jr.....Chicago
Gazda, Mace.....Chicago
Gettleman, Eugene.....Chicago
Gross, Harold T.....Chicago
Hartman, Clifford D.....Sublette
Hasterlik, Robert J.....Evanston
Huffman, John W.....Evanston
Jawor, Walter J.....Chicago
Kaufman, Jerome D.....Oak Park
Klein, Alfred J.....Chicago
Kratz, Leonard A.....Evanston
Larkin, Leo C.....Oak Park
Levy, Harry M.....Chicago
Lusk, William W.....Carlinville
Mackoff, Saul.....Chicago
Marron, James W.....River Forrest
McMillian, John C., Jr.....Oak Park
Milligan, Bruce W.....Jacksonville
Moore, Jean W.....Danville
Murphy, John B.....Chicago
Nagel, Frank E.....Chicago
Norris, Reginald M.....Jacksonville
Olson, Clarence.....Chicago
Palutsis, Stanley R.....Cicero
Pavletic, Nicholas B.....Chicago
Pope, Charles E.....Deerfield
Probasco, John L.....Roxford
Reuther, Theodore F.....Chicago
Rheingold, Joseph C.....Chicago
Richburg, Louis A.....Glencoe
Russell, Lawrence A.....Oak Park
Saunders, Hubbard P.....Chicago
Schroeder, William F. III...Rock Island
Shifrin, Max.....Chicago
Shurtz, William G.....Chicago
Simons, Joseph.....Chicago
Smith, Charles O.....Oak Park
Solomon, Ernest M.....Glencoe
Stanton, Herbert M.....Downers Grove
Sullivan, John L.....Amboy
Szymczak, Francis S.....Chicago
Thrasher, Irving D.....Chicago
Thurston, Eric W.....Chicago
Tracy, Paul C.....Chicago
Verhaag, Joseph E.....Chicago
Wallace, James H.....River Forest
Wangelin, Evans H.....Belleville
Werner, William B.....Pekin
Wittenberg, Carlton E.....Danvers
Zimmerman, Leo M.....Chicago

Massachusetts

Barr, Joseph S.....Boston
Baxter, Raymond H.....Marion
Bruce, Norman H.....Auburndale
Buddington, Westen T.....Newton Ctr.
Cenni, Louis J. Jr.....Worcester
Chamberlain, John W.....Belmont
Donahue, Lewis C.....Needham
Draper, Russell T.....Uxbridge
Eley, Richard C.....Boston
Farrington, Robert F.....Franklin
Fraser, William G.....Lynn
Gates, Paul P.....Acton
Goodwin, Robert H.....Dartmouth
Hafferty, William A.....Brookline
Harvey, Earle A.....Melrose
Hearne, Thomas M.....Melrose
Hindman, James H.....Lawrence
Hollowell, Frederick D.....Jackson
Hunter, Thomas.....Shrewsbury
Johnson, Allen S.....Longmeadow
Joplin, Robert J.....Chestnut Hills
Klivansky, Marcus.....Lynn
Krumbhaar, George D.....Brookline
Leary, Daniel L.....Newbury Port
Littlefield, Leland A.....Cambridge
Lulow, William V.....Brockton
Mahoney, Edwin M.....Holyoke.
May, George E.....Wellesley Heights
Nelson, Herbert B.....Newton Center
O'Brien, Francis R.....Roxbury
Pelton, Thurlow H.....Pittsfield
Rosenberg, Joel.....Natick
Ruggles, John K., Jr.....Hopkinton
Sears, Warren H.....Springfield
Segal, Samuel Jr.....Springfield
Styron, Charles W.....Boston
Sullivan, Raymond F.....Worcester
Szynal, John S.....Webster
Tegelberg, Julius J.....Worcester
Walsh, James R.....Framingham
Whitelaw, George P.....Boston

Michigan

Arscott, Edward F.....Rogers City
Ascher, Meyer S.....Detroit
Bohn, Zolton S.....Grosse Point
Brancheau, Lynus T.....River Rouge
Brukardt, Herman R.....Menominee
Cook, Carl S.....Holland
Curts, James H.....Saginaw
Dudzinski, Edmund J.....New Baltimore
Engel, Earl H.....Wyandotte
Flynn, John D.....Grand Rapids
Fortmann, Daniel J.....Lansing
Goetz, Angus G.....Grosse Pt. Farms
Herkimer, Daniel R.....Lincoln
Hiscock, Harold H.....Flint
Jackson, Howard C.....Kalamazoo
Jenkins, Elwood A.....Detroit
Joyce, Stanley J.....Detroit
Lowe, Kenneth H.....Battle Creek
Marwil, Thomas B.....Detroit
Moe, Carl R.....Kalamazoo
Murray, Charles R.....Saginaw
Nolting, Wilfred S. H.....Detroit
Paine, Raymond L.....Ann Arbor
Ralph, Leland P.....Grand Rapids
Reinsh, Ernest R.....Detroit
Rozan, Milton M.....Lansing
Sargent, Donald V.....Saginaw
Sayre, George S.....Detroit
Schneider, Curt P.....Detroit
Shellenberger, Herbert M.....Marshall
Spencer, Perry C.....East Lansing
Strickroot, Frederick L.....Detroit
Vincent, Edward H.....Kalamazoo
Weidner, Harold R.....Coldwater
Williams, Louis A.....Grand Rapids
Wishropp, Edward A.....Grosse Pointe
Young, Lloyd B.....Detroit

MEDICAL OFFICERS RELEASED BY THE NAVY

New Jersey

Berkow, Samuel G.....Perth Amboy
Bowman, Ned O.....New Brunswick
Davis, Thomas C.....Millburn
Deichman, Charles H.....Morristown
Evans, Edgar J.....Denville
Faux, Frederick J.....Woodbury
Gershman, Joseph G.....Dumont
Hewson, George F.....Newark
Hitzemann, Louis A.....Maywood
Losito, Amedeo J.....Harrison
Lynch, Maurice M.....Hackensack
Mills, Stephen D.....Westfield
Mitchell, Willis B.....Phillipsburg
Morfit, Henry M.....Englewood
Nicoll, George L.....Dover
Pavia, John R.....E. Orange
Scala, Armando.....Suffern
Sturr, Robert P.....Haddon Heights
Varriano, John L.....Jersey City
Walker, Donald H.....Elizabeth
Walker, Harold G.....Wyckoff

New York

Ahouse, John.....New York
Alexander, Hyman.....Brooklyn
Barbieri, Vito Jr.....Hastings
Barclay, Alexander J.....Newburgh
Beneventi, Francis A.....Kew Gardens
Bennett, Arthur L.....Buffalo
Binkley, James S.....New York
Blau, Abram.....New York
Brink, Robert H.....Cortland
Brody, Philip.....Brooklyn
Burke, William H.....Elmira
Cammer, Leonard.....Arverne
Christensen, Bryant E.....New York
Clark, David G.....New York
Comstock, Edwin F.....Wellsville
Cotton, William R.....Brooklyn
Damrosch, Douglas S.....New York
Deely, Thomas H.....New York
Dickson, William B.....Hertford
Dobson, Clarence D.....Great Neck
Drew, Jeremiah E.....New York
Drewry, Henry H.....New York
Elias, Herbert L.....Rockville Center
Ellsworth, Herman C.....Ithaca
Fairstein, Samuel J.....Mt. Vernon
Farrell, James I.....Utica
Fink, Harold.....Brooklyn
Fitzgerald, Dudley B.....Lockport
Friedman, Harold A.....Rochester
Fuller, Clarence C.....New York
Gardiner, Charles E.....Whitney Point
Gilbert, Charles L.....New York
Goldberg, Moses M.....Woodhave
Groesbeck, Harvey P. Jr.....Schenectady
Gwynn, Charles A.....Syracuse
Hanna, William H.....Bronx
Hannan, Bernard D.....Glens Falls
Harris, J. W.....Oakwood Heights, L. I.
Hartman, Daniel L.....New York
Herold, Ross E.....Central Islip
Hixson, George D. II.....Lockport
Hurwitz, Samuel.....Jamestown
Jackson, John W.....Bayside
Jacobson, Sheldon A.....Riverdale
Kelley, Kenneth.....New York
Kilgour, Duncan G.....New York
Kolodny, George R.....Brooklyn
Krom, John B.....Kingston
Laidlaw, John B.....Rochester
Levin, Ralph T.....New York
Levine, David R.....Brooklyn
Lilly, Gerald T.....Rockville Center
Lippschutz, Eugene J.....Buffalo
MacLean, John A., Jr.....New York
Mazzola, Nunzio J.....Brooklyn
McLean, Hugh A.....New York
Mead, DeWitt C.....Fulton
Millard, Ernest B.....Ilion
Miropol, Harold S.....Brooklyn
Munzer, Maurice H.....New York
Napp, Louis J.....Middletown

New York—Continued

Novek, Joseph G.....Utica
O'Brien, James L. M.....Cedarhurst, L. I
O'Connor, John J. Jr.....Garden City, L. I.
Peters, Stanley B.....Silver Creek
Propp, Simon.....Albany
Quinlan, James W.....Rochester
Quinn, Wm. B.....Jackson Heights, L. I.
Reedy, William F.....Buffalo
Reynolds, Chester L.....Rochester
Ross, Donald P.....Lewiston
Rossman, Morris M.....Freeport
Rusch, Henry A., Jr.....Oyster Bay
Sackin, Israel J.....Brooklyn
Schomer, Alexander.....New York
Schwentker, Francis F.....Larchmont
Schenk, Kenneth W.....Northport
Shaughnessy, Daniel C.....Harkimer
Smith, Lionel O.....Binghamton
Snopek, Charles F.....St. Albans
Steiner, Morris.....Brooklyn
Stern, Jacob E.....Richmond Hill, L. I.
Tancer, M. Leon.....Brooklyn
Thomas, Lewis.....New York
Vander Veer, Albert II.....Albany
Wagner, Philip V.....New York
Webster, George V. O.....New York
Weintrob, Morris.....Brooklyn
Withington, Lawrence F.....Watertown
Woodward, John F. Jr.....New York

Ohio

Barker, Taylor W.....Cincinnati
Basinger, Norman E.....Elyria
Botsch, Bernard.....Toledo
Brown, Joseph E.....Cleveland Heights
Cukerbaum, Alfred R.....Youngstown
Duncan, Charles H.....Columbus
Errington, Allison F.....Akron
Feiman, Daniel T.....Canton
Gray, James.....Rocky River
Hirsh, Leon S.....Cincinnati
Klewer, Harold W.....Toledo
Klopfenstein, Alpha R.....Toledo
Lind, Samuel C.....Cleveland
List, Ellis W.....Andover
Martin, Kent E.....Cincinnati
Nuckolls, Chester R.....Cleveland Heights
Riddell, Malcolm M.....Fremont
Schumacher, Arthur H.....Lakewood
Strohmenger, Warren L.....Wyoming
Thomasson, Leslie H.....Cleveland
Vollmer, James E.....Cincinnati
Wetzel, Ralph E.....Tallmadge
Whitehead, Raymond N.....Bowling Green
Yeip, Melvin F.....Euclid

Pennsylvania

Brackbill, Allen G.....Paradise
Brown, Kent L.....Boyds Mills
Clarke, Frederick T.....Easton
Corbett, William T.....Mauch Chunk
Deaver, Joshua M.....Philadelphia
Domanski, John J.....Delaware Co.
Dozier, Paul.....Philadelphia
Eskin, Albert.....Philadelphia
Geckeler, George D.....Jenkintown
Gershon-Cohen, Jacob.....Philadelphia
Hafer, Jesse G.....Pottstown
Horton, Park M.....New Milford
Hutton, Edward H.....Hanover
Kaufman, Samuel R.....Wilkes-Barre
Le Grand, Robert H.....Philadelphia
Massaniso, Frank P.....Philadelphia
Morgan, Theodore J.....Pittsburgh
Page, Henry F.....Philadelphia
Polentz, Paul F.....Philadelphia
Ricker, Charles T.....Cheltenham
Rohm, Jack Z.....Carnegie
Saska, August.....Pittsburgh
Slater, Ralph L.....Upper Darby
Tidd, Ralph M.....Erie
Tomlinson, John W.....Sharon Hill
Wasley, Douglas C.....Linwood
Wesner, William N.....Johnstown

Texas

Coates, Elmer T.....San Antonio
Cochran, Ernest W.....Trinity
Cox, Abram M.....Longview
Crain, Edward L. Jr.....Houston
Deason, Loyd S.....Henderson
Eckhardt, Kleberg.....Corpus Christi
Graves, Edwin G.....Houston
Guynes, William A.....Mathis
Hamrick, Wendell H.....Houston
Hudson, Richard L.....Smithville
Matros, Nathaniel H.....Corpus Christi
Maxwell, Hal W.....Myra
McDaniel, Walter S.....Houston
Moet, Joe Louis.....La Feria
Morris, Abner J.....Fort Worth
Morris, Archibald T.....Dallas
Oliver, John S.....Houston
Patteson, James L.....Houston
Rehfeldt, Frederick C.....Fort Worth
Rumph, Quah.....Houston
Sigler, Robert J.....Corpus Christi
Southerland, William I.....Sherman
Stackhouse, Howard Jr.....Houston
Swetland, Douglas R.....Houston
Wolters, Carlton E.....Shiner

Utah

Broadbent, Leroy V.....Salt Lake City
Christensen, Norman A.....Brigham City
Horne, Albert M.....Salt Lake City
Hosmer, John A.....Midvale
Kuhe, Emil B.....Salt Lake City
McLaughlin, Richard F.....Price
Orme, James F.....Tooele
Reese, Owen G.....Salt Lake City
Stevenson, Vernon L.....Salt Lake City
Taylor, Albert R.....Provo
Vance, Cyril L.....Salt Lake City

Vermont

Fregosi, Henry J.....Proctor
Page, Russell S., Jr.....Hyde Park
Quinn, Edward J.....Castleton
Ravit, George J.....Rutland
Rees, Walford T.....Burlington

Washington

Adix, Henry V. Jr.....Seattle
Capell, Harry J.....Yakima
Kretzler, Harry H.....Edmonds
Kuljis, Dominic A.....Bellingham
Lockwood, William W.....Spokane
Powell, Archie C.....Seattle
Stroh, James E.....Seattle
Tuell, Joseph I.....Seattle

Wisconsin

Benjamin, Hiram B.....Wauwatosa
Calvy, Donald W.....Fon du Lac
Campbell, Paul E.....Waukesha
Carney, John L. P.....Renton
Collopy, Paul J.....Milwaukee
Conley, James E.....Watertown
Conway, James P.....Milwaukee
Davies, Gwilyn.....Waukesha
Dryer, Raymond B.....Poynette
Galgano, Rocco S.....Delaware
Green, Donald M.....Wausau
Grimm, Joseph J.....Milwaukee
Gunderson, Clayton B.....Everett
Harris, Arthur J.....Adams
Hershberger, Lloyd R.....New Glarus
Jensen, Richard A.....Menasha
Kelly, James D.....Wauwatosa
Krembs, Martin A.....Stevens Point
Kronzer, Joseph J.....Oshkosh
McCormick, Stuart A.....Madison
Monroe, Maurice E.....Hartford
Rice, Maurice G.....Stevens Pt.
Taxman, Joel E.....Milwaukee
Tegtmeyer, Gamber F.....Milwaukee
Wear, John B.....Madison
Wirthwein, Carlton.....Milwaukee
Zimmerman, Felix H.....Watertown

ORGANIZATION SECTION

THE PUBLIC RELATIONS OF AMERICAN MEDICINE

Morris Fishbein, M.D.

Editor, The Journal of the American Medical Association

CHICAGO

Centuries ago the profession of medicine was little concerned with public opinion. Medical knowledge was concealed in mystery. Latin was used by physicians in their discussions and in their prescriptions. Patients were never admitted into the inner sanctum. Medical books were written in a language difficult to understand. The nomenclature of disease, of drugs and of operative procedure was concocted to preserve secrecy. The medicine of those days had little to give for the public good compared to what modern medicine has to offer. Perhaps concealment of the limitations of medical knowledge was desirable for the maintenance of public respect. Often people admire most that of which they know least.

Medicine was not, however, the only human undertaking that kept from people generally information of its activities. Governments have from time immemorial kept from the people whom they govern the information that the people have needed to evaluate accurately what their governments are doing for them. Great industries have often kept from the consumers of their products and even from the stockholders the intimate details of their activities. The present century, however, has seen a striking change in attitudes. Leaders now realize that public good will can do much toward success in achieving well warranted objectives. The development and maintenance of good will is the fundamental objective of the profession of public relations. However, experience has demonstrated through experimental evidence and through well documented case histories that public relations technic, like any well conceived therapy for any disease that occurs to the human body, is limited in its success by many uncontrollable factors. The legendary case history in the field of public relations is the story of the change in public attitude toward John D. Rockefeller. The early days of the development of Standard Oil and particularly its relations with labor brought upon Mr. Rockefeller a good deal of public condemnation. The pioneer public relations expert Mr. Ivy Lee was summoned. According to legend, Mr. Ivy Lee stated that it would be difficult indeed to create good will for the John D. Rockefeller whom the public had in mind but that it might be possible to create a different John D. Rockefeller who would easily earn public commendation. Thus came the great philanthropist to whom we owe the Rockefeller Foundation, the International Health Board, the University of Chicago and similar agencies. The transition period is still in the minds of many whose period is contemporaneous with that of Standard Oil. The success of Goebbels and Mussolini in swinging entire nations to unification behind beliefs that were essentially unsound might be cited as proof that public relations in a totalitarian nation can sell even an unsound proposal. However, the history of Germany and Italy proves that an unjust or unfair proposal cannot be sold indefinitely. Sooner or later the public becomes aware of the inefficiency or the inadequacy of the product. Thereafter no amount of public relations effort can be successful in maintaining public confidence. In a democracy such as ours not even the government can monopolize a public relations effort. The public relations activities of industries, professional associations, nonprofit philanthropies and governmental agencies are competitive for the good opinion of the people.

REPORT ON PUBLIC RELATIONS

The application of these principles to the relations of American medicine to the medical profession and to the people was carefully considered at a conference called by the Council on Medical Service of the American Medical Association at a meeting in November 1945. From that conference came a report which was presented to the House of Delegates at its meeting in December and which received the approval of the House of Delegates. The report of the special committee of the conference on public relations indicated that two different public relations efforts are essential for American medicine. One is concerned with the members of the medical profession and with various medical organizations; the other is concerned with the relations of medicine to the public.

PUBLIC RELATIONS OF MEDICINE FOR THE PHYSICIAN

Thorough education of the medical profession is a necessary preliminary to the establishment of efficient public relations with the public. It is difficult to get physicians to inform themselves concerning current problems in social medicine and in medical economics. Many physicians will not acquire the necessary information even though it is given to them through national, state or local medical publications. An informed medical profession is, however, essential to unification of effort and to any attempt to acquaint the public with the ideals that underlie our objectives.

By the nature of medical organization in the United States the majority of effort to reach the individual physician with necessary information must be made by the county and state medical societies. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is the most widely read of all medical publications. But even in THE JOURNAL many readers carefully avoid the proceedings and minutes of official committees and boards and councils. I have watched for thirty years various attempts to induce the American physician to inform himself fully on medical economic matters and to participate fully in the efforts necessary to reach the public and the Congress. The American Medical Association sent a special periodical devoted wholly to medical economics without charge to every Fellow of the American Medical Association. It was not read by enough regularly interested readers to make its maintenance desirable. The Board of Trustees therefore discontinued the publication of the *Bulletin* and restored the discussions of medical economics and medical legislation to the pages of THE JOURNAL. The reasons underlying the disinterest of great numbers of the medical profession in these problems that are essential to their welfare are probably the same as underlie the disinterest of a great number of citizens in similar problems that concern them.

The advancement of medical science with the increase in specialization, the formation of great numbers of specialistic medical societies, the installation of the compulsory hospital conferences, the insistence on long internships and residencies which prolong extensively the preparation of the doctor, so that his actual years of practical work are limited, have all contributed to lessening the opportunity of the individual physician to participate fully in the work of his county and state medical societies. This attention has been turned more and more to the strictly scientific aspects of his practice. Perhaps a necessary stimulus to secure his interest in medical economic affairs would be an immediate and violent attack on his pocketbook. The theoretical possibility of such an attack invoked in the establishment of a compulsory sickness insurance system does not particularly disturb him. He appears confident that his organization will look after his interest. Moreover, it is evident, and indeed the promoters of socialized medicine do not hesitate to promise, possibly with tongue in cheek, that under a socialized system the one third of the profession who have the lowest incomes would probably benefit materially.

An intensification of interest of the majority of the medical profession, and particularly of leaders in the various specialties,

in the social and economic aspects of medical service is exceedingly desirable. Much of our public relations effort must be directed at the earliest possible moment to securing just such an interest—to securing, in fact, an active participation beyond even the subscription of funds. Every physician should have full knowledge of what is involved in current legislative proposals and should participate fully in the effort to extend such information to the public.

Careful consideration was given by the Board of Trustees of the American Medical Association some years ago to the question of making certain that essential information reached at least the physicians who are primarily responsible for the conduct of the public affairs of American medicine. As a first step in this direction, even before the establishment of the Council on Medical Service, the Board of Trustees developed a letter to be sent regularly without charge to such physicians. In the compilation of the mailing list it was discovered that the number of such men constitutes only a small percentage of the total number of physicians in the United States. Approximately 190,000 physicians are licensed to practice medicine, and of these about 155,000 are actually in practice. Membership in the American Medical Association includes well over 125,000 physicians. The Fellowship in the Association approximates 70,000 physicians. A careful listing of the physicians in the United States who carry on most of the public work of medicine yielded nearly 3,000 names. These are the officers (including the councils) of the state medical societies, the members of the House of Delegates, the officers of national medical associations not rigidly scientific in their objectives and the editors of state medical journals and of important county medical society bulletins. News letters are more extensively read than any other type of informational material thus far developed. More recently the Council on Medical Service has initiated and carried on the news bulletins which it now sends both from Washington and from Chicago to interested and active leaders.

Significant also are the regional conferences conducted by the Council on Medical Service as a means of enlightening medical workers in public affairs. Even though these regional conferences are thrown open to attendance by any member of the medical profession, the attendance seems to be voluntarily and narrowly limited by the will to work of those in the area served.

In choosing the title for this address I carefully made it "The Public Relations of American Medicine" rather than "The Public Relations of the American Medical Association." The American physician has become an important figure in the social and economic life of our country. He does not obtain his information in public affairs and in the field of medical economics solely from the publications of his own organizations. Much of what he hears and reads comes to him through agencies that are not the official agencies of the medical profession. Exactly as he was compelled in a previous era to make his own distinction in the authenticity of scientific data presented in a variety of periodicals, of claims for therapeutic agents offered in original allegedly scientific contributions and in advertising of physical devices, of foods and of educational institutions, so must he now depend on his own ability to evaluate evidence in the field of medical economics. In an earlier day the proprietary medicine manufacturers, the promoters of peculiar physical apparatus, the owners of some 165 medical colleges were the purveyors of highly questionable data which the physician himself had to evaluate. Then came the Councils on Pharmacy and Chemistry, on Medical Education and Hospitals, on Foods and Nutrition and on Physical Medicine, and later the Council on Industrial Health, to study new drugs, new devices and new proposals to assemble all relevant data and to evaluate them and to place on those which seemed to merit approval an indication of their acceptance. In the field of medical economics there was not, until the establishment of the Council on Medical Service, any authoritative agency that could make such an evaluation. The Bureau of Medical Economics of the American Medical Association was charged with assembling data concerning all matters in the field of economics in medicine, and it published during the period of its greatest efficiency before the war, when it was adequately served with personnel, a vast amount of important and reliable data.

DIAGNOSING THE PROBLEM

The accumulation and assembling of sound factual data is fundamental to any public relations effort in the field of medicine or in any other field. In understanding the public relations effort of medicine, an adequate diagnosis of the problem is essential.

Mr. Carl Byoir, well known expert in public relations, calls attention to the fact that current headlines documenting the swing of nation after nation to the left are a warning signal. "Obviously," he says, "capitalism as a way of business and a way of life can survive in our democracy only if enough people are convinced that their best interests are served by it. . . . In the final analysis, public relations is long-range planning." By promoting interest in the medical profession with the general public, public relations will pave the way for better relationships with future employees who will be recruited from the public, with the patients who are the public and with government officials who not only are part of the public but who like to feel that they represent the public's opinion.

The first task of a public relations effort is to determine the public whose favorable opinion is to be sought and to plan a public relations program directed to that public. What do the people who are the patients of the physicians, and the legislators who are not only patients but who also represent people generally, think about medicine? Do they have opinions that are unfavorable to the medical profession? After scientific research into such opinions have revealed their nature and has indicated practices that are unsatisfactory to the people, we must determine whether or not it is possible to change such practices and thereby to change opinion. If the practices should not be changed, the public must be convinced of their necessity.

In the field of medicine it has become clear, both in the United States and in Great Britain, as has already been well established, that the relations of the individual physician to the individual patient are on a substantially sound basis. The public in general does not express resentment against the individual physician. There are, of course, instances in some communities in the United States in which some physicians have been tactless or careless or outright greedy in assessing costs for medical service to their patients. When in any community the general practice of medicine or of any other necessity of human life becomes so costly that it is not generally available to the vast majority of the people, resentment is bound to develop among the people against the purveyor of either a commodity or a service. In the United States as a whole the high standard of living and the average income of the worker have been sufficient to permit him, in the vast majority of cases, to meet the costs of medical care. The difficulty arises, however, as innumerable economists and social service workers have pointed out, when catastrophic illness strikes as an emergency. Even most of our wage earners in the higher levels are often unprepared for a major surgical operation, for a considerable stay in the hospital, for a serious siege of pneumonia or gastric ulcer or for a chronic psychiatric disturbance.

PUBLIC RELATIONS ACTIVITIES FOR THE PUBLIC

The American people do not question the quality of medical service available in the United States. The medical profession has utilized the press, motion pictures, exhibits, the radio and every other means of dissemination of information to educate the American people as to the advances of medical science. Nothing even approximating this educational effort has been accomplished in any other country in the world. In this work the leadership of the American Medical Association is acknowledged and is recognized by innumerable agencies. Press associations like the Asociated Press, the United Press and the International News Service cooperate fully. The broadcasting chains (particularly the National Broadcasting Company, over whose channels for almost a decade there have gone regularly magnificent programs of health education) have published their recognition of merit. Exhibits disseminated by the Bureau of Exhibits are requested far beyond our ability to supply them. Hundreds of thousands (if not millions) of letters have gone directly to the public from the Bureau of Health Education, the Bureau of Investigation and the various Councils of the Association and indicate public confidence in the information provided. The extension of scientific contributions from all the

periodicals of the Association to the press and the radio, the efficient arrangements for extending the scientific advances reported at various scientific sessions of the Association, which have begun to be imitated by other organizations in the field of science, the lectures by the members of the headquarters staff, are additional means that are extensively employed. *Hygeia* is now recognized as the most successful exclusively health periodical ever developed in the United States; today it is more quoted by newspapers, digest magazines and other publications than any other periodical in this country. In all of these ways the American Medical Association has demonstrated its ability to inform the public about the advancement of medical science and the services that physicians can render. Furthermore, through cooperative efforts with the National Education Association, the American Association for Health, Physical Education and Recreation and many similar bodies, health education is now being definitely integrated into the curriculum of our schools. Experts in the field of public relations who have been informed of these efforts and whose advice has been sought are unanimous in their statement that these activities constitute one of the most efficient performances in the field of public relations undertaken by any profit or nonprofit group in our country.

Of course the American Medical Association has not been alone in this effort to educate our people regarding medicine and health. The United States Public Health Service, many of the state medical societies, many public health officials and public health agencies and the great philanthropies, such as the American Cancer Society, the National Tuberculosis Association and the National Foundation for Infantile Paralysis, have contributed notably. Incidentally, all these agencies secure much source material from the American Medical Association. A survey of public opinion reveals that there is general public acceptance of the American Medical Association and its policies as far as concerns scientific progress, health education and protection of the public against inferior medicine and quackery. In one survey a majority of persons who knew of the American Medical Association stated that it was an organization primarily concerned with the advancement of medical science and with the protection of the public against fraudulent medicine.

THE PRIMARY PROBLEM IN MEDICAL PUBLIC RELATIONS

What, then, is the primary problem in public relations of the medical profession in the United States today and how is that problem being solved? When Bismarck introduced social security in Germany in 1883 there were few repercussions in the United States. Our concern with the problem began in 1911 after Lloyd George had converted Great Britain to national sickness insurance as a means of defeating the Labour Party in a British political controversy. The problem came prominently to the attention of the House of Delegates in the years from 1914 to 1916 and a resolution was adopted urging the American Medical Association to act in behalf of molding legislation for compulsory sickness insurance. A committee was appointed to study the problem, and a series of pamphlets, largely favorable to compulsory sickness insurance, was published under the auspices of the Council on Health and Public Instruction of the American Medical Association. However, when the dangers to the public interest of such a system became evident, medical opinion crystallized against state medicine, socialized medicine and compulsory sickness insurance. Medical opinion in the United States has been firmly opposed to such systems of medical care since that time. The majority of medical opinion opposed to compulsory sickness insurance has gained in strength and vigor as the years have passed.

In 1932 the Committee on the Costs of Medical Care offered its proposals for change in the nature of the practice of medicine. These too were officially opposed by the medical profession, which at that time also opposed voluntary sickness insurance as well as voluntary hospitalization insurance. Perhaps a word is necessary now to indicate the reason for that attitude. The medical profession is scientifically trained. Before any new method of treatment is accepted, the value must be demonstrated and the safety of the method must be assured. Medicine as a profession demands equally that social experiments in the field of medical practice prove their value and their safety before they are acceptable and before they are extended to the public. People in general must depend on the physician to protect them from harm in the use of new and untried remedies. People must depend on the medical profession equally to protect them against social experiments in the administration of medical service which may do more harm than good. Until actuarial data became available sufficient to warrant the calculation of risk, it would have been folly to propose hospitalization insurance for general adoption throughout the United States. The history of innumerable hospitalization plans has proved the necessity for careful trial on a small scale of any plan before it is accepted for general adoption. Some of the hospitalization plans which are today among the leaders in membership and in efficient service passed through periods of trial in which their fate hung in the balance and in which the prognosis was grave. In the practice of hospitalization insurance questions still arise as to relationships between the hospitals and the medical profession. The methods of remuneration of physicians, the responsibility of the hospital to the patient, the responsibility of the physician to the patient and the relationship of some technical practices to professional practice still present unsolved problems. Every one of these demands careful consideration not only for the good of the individual patient but also for the ultimate effect of the decision on the advancement of medical science.

The problems in the field of voluntary sickness insurance, either by private insurance companies or by nonprofit voluntary mutual insurance companies, are even more numerous and concern more seriously the advancement of medical science, the quality of medical service and the relationship between doctor and patient. Nevertheless many of these problems are now being solved by the standard technic of trial and error, with correction of error when it is determined. This is the scientific method first propounded by Hippocrates and recognized by philosophers and statesmen as one of the greatest contributions of all time to human civilization.

The American Medical Association is frequently accused by the revolutionists in the field of medical care of fighting a rear guard action against the proponents of changes in the nature of medical practice. The history of medicine contains enough examples of the need of scientific study of new technics before general acceptance to warrant the delaying tactics that have been a feature of the policies adopted by the House of Delegates since 1932. These policies will yield a system of medical care for the American people consistent with democratic government and capable of providing under insurance principles a high quality of medical service. A too ready acceptance of half-baked financially unsound proposals in the field of prepayment plans for medical care would have yielded, as it has already in some other countries, notably New Zealand, only a series of disastrous failures. These would have led inevitably and soon to the taking over by the government of the complete sickness insurance program. This has been the history of sickness insurance up to this time. There is no reason to believe that a repetition of the poorly considered programs that developed in other countries would have led in this country to anything other than a governmentally owned system of medical practice and a deterioration in quality of service.

The present problem of public relations in American medicine in this country is to convince the American people that a voluntary sickness insurance system developed with features peculiar to the American way of life is better for the American people than a federally controlled compulsory sickness insurance system. In the attempt to educate the people regarding this problem and to convince them of the soundness of the point of view of the medical profession, many public relations technics have been employed. These have included, on the part of the American Medical Association, the presentation of data developed by its own Bureau of Medical Economics, policies adopted by its House of Delegates and widely circulated through the press, public debates in which many officials of the American Medical Association have participated, and the use of the press, the radio, periodicals, public addresses, motion pictures and every other medium of public expression. Many of the state medical associations have carried on independent efforts which have been highly efficient in their performance. Some groups of states have participated in such activities. A considerable number of states, however, have failed to be especially active in this regard.

By the American system of government, the ultimate decision must rest with the Congress of the United States. In the history of the American Medical Association now being prepared for the one hundredth anniversary in 1947 some of the record of the activities related to the Congress will be made available. Intelligent men learn from experinece. Previous experience has guided what is now being done. Congressmen are more and better convinced by hearing the views of their own constituents than by printed matter or even by personal interviews from representatives of national agencies. The American Medical Association and other national agencies have made certain that our representatives in the Senate and in the House are fully informed concerning the fundamental data related to medical service and the professional aspects of medical care. They look to the medical profession for authoritative opinions on the medical service aspects of sickness care. They do not look to the medical profession for either data, opinion or argument concerning the costs of such a program, the methods of compensation or the rights of the government in relationship to the provision of funds. Incidentally, just how many measures inimical to the medical profession or the advancement of medical science have ever passed the Congress? For more than thirty years a compulsory sickness insurance bill has been introduced at every Congressional session. Thus far not one has ever reached the likelihood of favorable consideration.

The headquarters of the American Medical Association has established relationships with most of the leading periodicals of the United States, with the press and the press associations, with the radio chains and with every other medium of public expression sufficient to make certain that all of these are available for extending to the people the point of view of American medicine. In these efforts many of the state medical associations and a good many county medical societies participated fully. Certainly the periodicals of the state medical associations have been liberal in the space devoted to such discussions and have in many instances efficiently extended their discussions to the general press in their own states. The American Medical Association has not purchased either radio time or advertising space for the expression of its point of view. The Board of Trustees apparently has not felt that such an action was consistent with the nature of the Association or with the policies advocated by the House of Delegates. Nevertheless this aspect of extension of medical opinion to the public has not been neglected. Recently other agencies have entered the field to meet this need in behalf of American medicine and to carry on a public relations effort sufficient in scope and influence to meet modern concepts.

ORGANIZATIONS ACTIVE IN MEDICAL PUBLIC RELATIONS

The National Physicians Committee has supported the policies of the House of Delegates and has, by a variety of technics, extended its point of view to the American people.

Among the membership of the American Medical Association is a small percentage of physicians who do not agree with the policies of the House of Delegates regarding social aspects of the practice of medicine. Such groups as the Physicians Forum, the Committee of Physicians and the American Association of Physicians and Surgeons from time to time express themselves on such subjects. They compete through press releases or radio talks and in various other ways for public support with the official agencies of American medicine. Naturally their views receive wide publicity in the part of the press favorable to such views.

The Physicians Forum includes in its membership something under 2,000 names, with perhaps 50 active participants in its work. This is purely an estimate, although it is based on communications which have been received from Dr. Ernst Boas, who spearheads this effort in favor of socialized medicine. The Committee of Physicians once included some 400 names and it may now include something under 1,000. Its active body includes not more than 15 and probably 2, namely John Peters and Allen Butler, who do 99 per cent of its work and make its opinions. The American Association of Physicians and Surgeons has, according to fairly well substantiated rumor, received $10 from each of 6,000 physicians who have subscribed to its principles. Just what it has accomplished other than to state its objectives and to get them out in the press is not clearly apparent. This group, however, proposes that the physicians of the United States strike against the sick public in case the government of the United States should establish compulsory sickness insurance. Such an action would be contrary to all of the tradition of medical science covering the responsibility of the physician to the sick. No official body of the American Medical Association has ever ventured even the thought that physicians would neglect to minister to the sick as evidence of their opposition to the law of the nation.

The National Physicians Committee has been most effective of all the organizations striving to mold public and legislative opinion in the field of medical care. Its efforts have been repeatedly endorsed by the House of Delegates of the American Medical Association. This agency has used syndicated newspaper publicity and editorial opinion, newspaper advertising, pamphlets, radio, direct-by-mail solicitation, education and every other technic of public relations in its work. Currently some thousands of representatives of medical industries are encouraging every one whom they meet or interview to communicate directly with the Congress expressing opposition to the compulsory sickness insurance feature of the National Health Program and to the Wagner-Murray-Dingell bill. In many communities joint action by physicians and medical industries has been stimulated to the insertion of advertising in the press, the use of local radio and other public relations work against state medicine. From twelve to fifteen million pamphlets were circulated in the attack on the previous Wagner-Murray-Dingell bill, which passed into innocuous desuetude, and many millions of pamphlets are now being circulated through drug stores, supply houses, hospitals and other medical agencies. Through this group also physicians are being educated as to the details of the proposed legislation, and they will be encouraged to make direct contact with legislators from their own states to make certain that the legislators are fully informed. The budget approximates several hundred thousand dollars and the funds are, as nearly as I can determine, efficiently and economically used. The medical profession owes a great debt of gratitude to the distinguished physicians who serve as the directing board of the National Physicians Committee and to the staff who carry out so effectively the policies that this board establishes.

Recently the Board of Trustees of the American Medical Association has employed competent public relations counsel to survey the activities of the American Medical Association in the field of public relations. Such counsel will evaluate the work, determine which activities are yielding effective results and which perhaps are failing, determine whether other activities should be undertaken and recommend for the American Medical Association a complete program in public relations. This action by the Board of Trustees is in accord with a modern trend toward recognition of the part that public relations plays in the conduct of any industry or public agency. The public relations activities of the American Medical Association are in process of evolution. The various councils, bureaus and committees of the Association were initiated in response to recognition by the House of Delegates of certain needs, and they have grown and evolved to fill the need.

Public relations is still a new profession. Many of its technics are still highly experimental if not controversial. One authority urges participation in public debates as a stimulant of interest; another asserts that public debate tends only to confuse the people and never convinces any one. On social proposals an organization like the American Medical Association may come into direct competition with the government for public favor. On some proposals it may enhance the government's efforts. When the President of the United States alines himself with a social point of view that is opposed by a private agency, that point of view achieves additional weight. Nevertheless in the past other presidents have thrown their weight in behalf of social or economic measures which were opposed both by individual agencies and eventually by the Congress and which, obviously, never became the law of the nation. The present efforts on the part of the federal govern-

ment to impose compulsory sickness insurance on the American people and on the medical profession is a political procedure made without adequate study and without regard to scientific factors fundamental to the health of the American people. Thomas L. Cotton, a public relations expert in the field of social research, has said "Few American business men welcome increased regulation of their operations by government. Freedom of initiative is circumscribed and the cost of operations usually increased. The opposition of business men to such threatening proposals has not always been well timed or wisely conceived. Oftentimes these regulatory measures for alleged social gains originate in some social agency or civic betterment group. Usually there is a long period of incubation before these ideas are hatched into legislation. During that formative period business men pay little attention to the matter. Of a sudden, legislation is introduced which is so idealistic that business could not live under it and the public relations man finds himself facing a serious problem." Mr. Cotton was concerned with the problem of small loans; yet that paragraph might just as well have been written about socialized medicine.

Today American medicine is in a strong position for the maintenance of a high quality of medical service, for progress against disease, for the development of an American system of medical care which will be free from governmental domination. Many important legislators, probably a majority of legislators, feel that the medical profession must be given its opportunity to meet the challenge before government intervenes. The conference on public relations of the Council on Medical Service concluded: "Antagonism of some elements of the public toward medical organizations seems to rest on the basis that opponents of organized medicine offer a specific program which promises complete medical care on what seems to be a relatively small financial outlay, whereas the medical profession has not yet come forward with a specific program for the extension of medical service on a nationwide basis with a system of payment easily available and sufficiently attractive to insure early enrolment of a large proportion of the public. The task of public relations would be rendered much easier if those concerned could be put in possession of a constructive program which they could promote to the public rather than in a position of continuous defense against programs coming from other sources."

The House of Delegates adopted a resolution recommending that the Board of Trustees and the Council on Medical Service and Public Relations proceed as promptly as possible with the development of a specific national health program. That program is near to completion and should soon be announced to the medical profession and to the people. When available it will become a powerful weapon in the battle against government dominated medicine. The House of Delegates recommended also that the Board of Trustees and the Council on Medical Service emphasize a nationwide organization of locally administered prepayment medical plans sponsored by medical societies. This move toward the development of a standard prepayment plan for medical bills, with an insurance policy recognized anywhere in the United States and bearing the mark of acceptance by the American Medical Association, will be another valuable tool in meeting the needs of the American people. We are developing a system of medical care consistent with the American democracy. Such activity in behalf of the people is the best public relations that could be evolved. Let us use every possible vehicle of dissemination of information to tell the people what we are doing.

DISCUSSION

MR. JOHN HUNTON, Executive Secretary of the California Medical Society: Public relations, as Dr. Fishbein has pointed out, has come into being in the twentieth century and just now is becoming recognized by the medical profession as a problem to be met by the profession. A few years ago at one of our meetings I happened to be in a conversation with two gynecologists, and one of them was talking about the fees that he charged. The other said "Who sets your fees?"

"I set my own fee."

"What do you mean, you set your own fee?"

"Why, I tell every patient what my fee is going to be, and that is what it is."

"Wait a minute! You don't set your own fee. A woman comes to you and you examine her and you say she should have a certain piece of surgery performed. She says 'How much will it cost me?' You say it will be $200, and she replies 'I want to talk it over with my husband.' The next week you see her in a hospital and somebody else is operating on her, and he doesn't charge the high fee that you do. Or she comes in and you say 'My fee is $200.' You operate on her and send her a bill for $200, and she pays you $100. Who sets your fee? The public sets your fee—your patients set your fee. You are not doing it yourself at all."

Not only does the public set the fees, but the public actually controls conditions under which medicine must be practiced. We are recognizing that gradually in some of the states; it has been recognized a little earlier in some other states. There is a realization coming to all of us that the public must be the controlling factor, the factor whose voice is going to be heard and to which we must listen. We see it in our own state; we see it in the national Congress. These proposals for compulsory sickness insurance are not new. We have had them in California since 1918. We have been fighting them violently. We had a terrific battle last year. They represent the voice of one segment of the public, the left wing group: a group which must be recognized and which actually represents a demand of a general character by the public for more readily available medical care on a budget basis at a price which the public can afford to pay. If the medical profession itself cannot provide that type of service, the government is going to do it for the people. We all know the way we want it. We want to do it ourselves and we don't want to do it under government domination.

In any public relations program a public relations expert starts his educational work at what he calls the point of contact. In the bank he will start with the bank tellers, the people who stand behind the wickets and meet the public. To the people coming into the bank the man behind the wicket is the bank. He is the person the depositor talks to; he represents the point of view and the policy of the institution. Unfortunately, in the medical profession, as large and as widespread as it is, and not representing a group of people in the employ of one employer, and therefore not amenable to a company educational program, the attack must be different. The approach has to be of a different nature. However, we still must do our educational work at the point of contact, which is the individual physician who sees his patients. We all know that one physician making a poor impression on a patient can offset the good work that a hundred physicians can do who really go out of their way to represent the medical profession properly and in a true light to the public.

We were recently approached by a group of commercial insurance companies who had a complaint that about 5 per cent of the doctors performing surgery under the indemnification policy as written by that company were making what the insurance company said were gross overcharges. The charge for the surgery was terrifically out of line with the indemnifications outlined by the policy. Ninety-five per cent of the doctors were complying more or less, but their fees were more or less in line with what was allowed under the policies. Five per cent were overcharging to a point where their overcharges were reflected back in the attitude of the individual patients, and they in turn went back to their own groups and their own companies, and the insurance companies found themselves losing business on account of what the small minority of 5 per cent of the doctors were doing. They were doing more harm than the 95 per cent were doing good.

If you are going to start at the point of contact and educate the individual physician in public relations, it is our idea in California that we should start very early; we should start in the medical schools. At one time or other we have had several rather haphazard courses in medical economics in the medical schools; they have not been well organized. They have been disjointed and inconsistent. We will find one school putting on a pretty good course one year, and the next year

they will say "It's too much trouble." We have found that when a good course is put on, and when it is voluntary, and an optional course, the students eat it up.

We are now planning to present a series of courses of this type in all of our four medical schools. Ted Wiprud has written a couple of books on the subject. I would like to pay tribute to him and to suggest that it be carefully considered in your own states. We are also having a little experiment in one of our large counties, Los Angeles County, which has a membership of about 3,600 physicians. The council of that society has voted that every new applicant for membership must undergo an indoctrination course and take an examination before he is admitted to membership. The idea is not to set up a barrier to keep him out; the idea is not to flunk a man on his examination; the idea is to make sure that every applicant for membership will go through a course of six meetings, which will include ethics, organization, history, malpractice, legislation and prepayment plans, and to let those applicants for membership know through that series of meetings that they have a responsibility jointly with the rest of the members and that they will be expected, as members, to assume their share of the responsibility and to handle themselves properly with the public—to let them know that they should not go off half-cocked on their own, and do something which will injure public opinion instead of improve it.

As Dr. Fishbein has stated, public opinion leads into legislation. We have had a lot of discussion in the last few years on legislation. We have had the Council on Medical Service and Public Relations established, and the Council is moving rapidly toward the fulfilment of the goal that a great many people throughout the country have had for a long time. Our legislators in our state capitals and in Washington reflect nothing but public opinion. They are representatives of the people. Sometimes I think they are misrepresentatives, but at least they are elected by the public, and fundamentally they are presumed to represent public opinion in the type of legislation which they introduce and which they pass or discard.

Our problem in medical public relations is to build our pyramid in the same fashion, to have the head of the pyramid extended into our legislative bodies so that when the matter of legislation comes up medical public opinion will influence the legislators. When legislation of any character comes up which will affect the practice of public medicine or the public health, then the medical profession as an organization will be well enough recognized and respected by the legislators so that they will take our word when it comes to testimony and when it comes to ideas on this, that or the other type of bill.

Most of us have had a lot of experience in our own states. The American Medical Association has had considerable experience in Washington along this line. That must be our ultimate objective, because after all if legislation of an adverse character is to be passed it is going to be a long time before it will be repealed again.

Dr. Fishbein has paid tribute to the job being done by the National Physicians' Committee. I think we have all seen the vast amount of literature that the National Physicians' Committee has put out. We have all seen that it has been highly effective. We all recognize that the National Physicians' Committee came into being because there was a definite need for it.

In my opinion the excellent work of the National Physicians' Committee could be better carried on if the National Physicians' Committee was actually a part of the American Medical Association.

The House of Delegates of the American Medical Association has given the National Physicians' Committee a nice pat on the back several times; however, it is still the National Physicians' Committee. If it could be the public relations department of the American Medical Association and be welded in as part of the Council on Medical Service and Public Relations, in my opinion it would be a much more effective organization. The same technics, the same formulas, the same personnel which have been effective so far could be made just that much more effective and could be utilized and made a definite part of the American Medical Association.

MR. EDWARD STEGEN, National Physicians' Committee: We owe a debt of gratitude to Dr. Fishbein for his extremely interesting and informative paper. A sound public relations program implies a careful internal and external analysis, an analysis that includes in its scope the people, the product or service, the need for the product of service, the public acceptance of the product or service, an analysis on the external side of what means and what avenues and what technics can be applied intelligently and legitimately to implement public acceptance, public understanding and public approval of the product or service. On the basis of an adequate analysis of a given problem with which public relations people must deal, planning has been good if the people are competent who are running the program; but frequently the work and the success of a given cycle of the program or effort is limited or liquidated by bad timing. Ivy Lee said that public relations was 50 per cent content and 50 per cent timing. We must think of public relations generally as an evolutionary process; in other words, public attitudes change. There are competitive elements in our society that change public attitude toward any given service or product. In any public relations program we must recognize the cyclic evolutionary aspect of the job.

Another instance of defect in many a good and well planned public relations program is the lack of coordination of effort. In a complicated problem, when you are dealing with many forces and many interests, numerous individual and group expressions, and when you are using all of the regularly accepted mediums to tell your story and to gain public acceptance, coordination is important; it must be a significant phase of planning and of operation. Effort must be made toward a uniformity of opinion and uniformity of expression of the people or the group that is being served. In my limited experience I once had the privilege of working with Mr. Cotton in an attempt to convince the people of this country that so-called remedial lending under the Uniform Small Loans Acts of the various states was a socially acceptable and useful device. The program was moving along satisfactorily until we discovered that all of the things we were saying and that had group acceptance by the people who were in the industry were being liquidated and placed in a critical position in many communities because of the individual expressions of people in their day-to-day job of doing business of lending money.

I don't suppose you can ever accomplish a total similarity of expression or total similarity of opinion. I do not think we are built that way. It is a problem that the public relations counsels and the public relations people must deal with, and an effort must be made constantly toward a uniformity of opinion in the group being served, to crystallize that uniformity of opinion into a uniformity of expression. The individual doctor enjoys such a distinct place in his community, and such a reverence from the people whom he serves, that all the contumely which from time to time has been heaped on the profession or the group by our critics has never actually come down to being a criticism of the individual doctor. The doctor is still an important and respected individual and a servant of his community. I believe that fact is most dramatically illustrated in some of the attacks which have come out of government agencies, where almost invariably and to a pattern the criticism begins "The American doctor is a great servant of his patients, and he is a well trained and effective physician." and then comes the hooker, "but—", and then the criticism of the group.

Dr. Fishbein brought clearly to point the fact that the job of public relations for medicine must begin with that individual who has that high percentage of public acceptance, the individual physician, that it must grow from there into the same kind of acceptance to the group, to the profession as a whole, or to any of the segmental organizations. That is really the problem which medicine faces today—to gain for the profession, for the organizations that represent the profession, the same kind of understanding on the part of the public and the same kind of acceptance which the public has so generously given to the individual doctor.

Mr. Hunton's comments on the relationship of the National Physicians' Committee and the American Medical Association were interesting. Although not identically so, but for pretty

much the same reason that the California Medical Association retains public relations counsel and uses an organized professional group to handle these aspects of its problem of public relations, I think organized medicine has found it desirable and eminently useful to have an organization such as the National Physicians' Committee to act pretty much in that professional area and to do certain segments of the job which in every instance are not readily adaptable to the line organization.

Since I have the task of dealing with medical public relations, this observation has struck me as significant: Medicine as such, through its many, many organizations, state and county societies, the American Medical Association, has employed the regular mediums of public expression better and more intelligently than any other organized group I know of, and we can use that great and good acceptance of our expressions, which has grown out of it, as the most effective device to deal with our legislative problem. The legislator, as the author pointed out, is both a member of the public, a government servant if he belongs to your party, and if he isn't he is a bureaucrat, and he believes he can give the most intelligent expression of public opinion because he has been chosen on an elective basis to represent the public. To deal with him we have to lay a groundwork and use all of the mediums of public and mass education. In dealing with the legislator we can show a definite connection between what the people think and what the people want, and what he thinks the people want. I am sure I express the consensus of our opinions that Dr. Fishbein did a marvelous job in dealing with this topic.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Veterans Administration

A bill introduced by Senator Langer, North Dakota, S. 1817, proposes to provide for hospitalization and treatment of veterans in nongovernmental hospitals. It provides that, when any person entitled to medical care, treatment and hospitalization under the laws administered by the Veterans Administration cannot be treated or hospitalized at a government facility within a reasonable distance from the place of his residence, the Administrator of Veterans' Affairs will be authorized to provide for such medical care and treatment by private physicians and for hospitalization in a nongovernmental hospital. The administrator would be authorized to enter into agreements with private physicians and nongovernmental hospitals to provide the necessary medical care, treatment and hospitalization at specified rates determined by him to be fair and reasonable. H. R. 5383, introduced by Representative Barry, New York, proposes an appropriation of $1,500,000 to be expended by the Administrator of Veterans' Affairs in building a new hospital and diagnostic center in the city and state of New York.

Medical Care for the Needy

Senator Langer, North Dakota, proposes by S. 1838 to amend and extend the provisions of title I, title IV and title X of the Social Security Act to provide, among other things, hospital, medical and health services to needy aged persons, to dependent children and to the blind.

Hill-Burton Hospital Construction Bill

Hearings before a subcommittee of the House Committee on Interstate and Foreign Commerce on bills pending before the committee proposing a hospital building program originally scheduled to begin on February 25 have been postponed until March 7.

Miscellaneous

H. R. 5465, introduced by Representative Savage, Washington, proposes to aid the states in establishing and maintaining a scholarship and fellowship program in the colleges and universities. For the fiscal year 1946-1947 an appropriation of $35,000,000 will be authorized, for the fiscal year 1947-1948, $50,000,000, for the fiscal year 1948-1949, $65,000,000, and for each fiscal year thereafter, $80,000,000. H. R. 5353, introduced by Representative Robinson, Utah, would authorize the Secretary of War to convey certain lands situated within the Fort Douglas Military Reservation to the Shriners' Hospitals for Crippled Children.

STATE LEGISLATION

California

Bill Introduced.—S. J. R. 7-X proposes that the President of the United States and the Veterans Administration be memorialized to enter immediately into contracts with the Army and Navy to take over a sufficient number of hospitals, adequately staffed, to furnish hospital facilities for veterans.

Georgia

Bills Enacted.—H. R. 169 became Governor's Act No. 77 of the Acts of 1945 on Jan. 31, 1946. It provides for the submission to the voters of an amendment to the state constitution creating a State Board of Public Welfare. H. 732 became Governor's Act No. 623 of the Laws of 1945 on Feb. 1, 1946. It provides for the creation of a hospital advisory committee and will require all persons operating or in charge of any hospital, sanatorium, infirmary, maternity home, nursing home or similar institution to be licensed by the State Board of Health.

Kentucky

Bills Introduced.—H. 225 proposes that no physician, surgeon or registered nurse shall be denied the right to attend and treat any patient, by whom such physician, surgeon or registered nurse has been employed, in any hospital or institution in the state on account of his race. The proposal would further prohibit the denial to any person, on account of race, of the right to receive postgraduate or in-service training in medicine, surgery or nursing in any hospital or institution in the state.

Massachusetts

Bills Introduced.—H. 801 proposes the creation of a state board of registration of opticians and defines an optician as "a person engaged in the filling, compounding or reproducing of prescriptions of physicians or optometrists for ophthalmic lenses, eyeglasses or other optical appliances intended for the correction or treatment of defective vision or ocular anomalies of the human eye, and the mounting and fitting of the same to frames or supporting materials, and the adapting of such lenses, eyeglasses and appliances to the use of the wearer." Physicians and optometrists are specifically exempted from the provisions of this bill. H. 1417 proposes to authorize the commissioner of mental health to provide hospital facilities and hospital treatment for the care of mentally ill children. H. 1468, to amend the law relating to the restraint of patients in mental hospitals, proposes that "restraints" shall not include chemical or mechanical restraint in cases of contagious disease, during the administration of anesthesia, or following an operation or accident which has caused serious bodily injury, or during the administration of shock therapy, insulin treatment or any other recognized specific therapy.

Michigan

Bill Introduced.—S. 9-X proposes the appropriation of $750,000 to the board of regents of the University of Michigan for the construction and equipment of a new maternity hospital and a new children's unit in connection with the University of Michigan hospital.

Bill Passed.—H. 13-X passed the house February 11. It proposes the approval of a postwar emergency hospital program for the construction and equipment of a number of hospitals for mentally affected persons.

Mississippi

Bills Introduced.—H. 430 proposes the creation of a Mississippi Commission on Hospital Care with the duties, among others, of assisting in developing, promoting and encouraging a voluntary prepayment plan of hospitalization, or hospitalization insurance. H. 431 proposes the creation of a state medical education board to receive and pass upon applications for loans

or scholarships made by students who are residents of the state and who desire to become physicians. The purpose of such loans would be to enable the applicants to obtain a standard four year medical education which will qualify them to become licensed, practicing physicians and surgeons within the state. H. 432 proposes an appropriation to the State Medical Education Board to provide loans or scholarships for citizens of the state who desire a medical education which would qualify them to become licensed and practicing physicians and surgeons within the state. S. 155, to amend the law relating to the licensing of nurses, proposes certain standards which a hospital must maintain in order to be recognized and approved as a training school for nurses. S. 181, to amend the law relating to the issuance of marriage licenses, proposes that both parties applying for a license to marry shall submit to a thorough medical examination by an active licensed physician in Mississippi, by a physician licensed to practice in any or all of the other states of the Union or the District of Columbia, by a commissioned medical officer on active duty in the armed forces of the United States, or by a medical officer of the United States Public Health Service, provided that said medical examination may be made free of charge by any full time county health officer licensed to practice medicine in Mississippi if the person examined is unable to pay for same. Medical examinations would include a standard serologic test or tests for syphilis.

Bills Passed.—H. 388 passed the house February 13. It proposes an appropriation to the State Board of Health for the conducting of a program of eradication and control of syphilis and other venereal diseases. S. 90 passed the senate February 11. It proposes to authorize the State Board of Health to maintain injunctive procedures to enjoin any person from the practice of any profession required to be licensed by said board when such person is practicing without first having obtained a license.

Missouri

Bill Passed.—H. 831 passed the house February 5. To amend the law relating to the appointment of deputy state commissioners of health, it proposes to authorize the county courts of any county to appoint as a deputy state commissioner of health a duly licensed qualified physician. The existing law requires only the appointment of a reputable physician.

New Jersey

Bills Introduced.—A. 45, to amend the medical practice act, proposes to admit to examination by the board of medical examiners persons otherwise qualified who instead of being licensed as a physician in some other state had served as an intern for at least two years in a hospital approved by the State Board of Medical Examiners. A. 47 proposes the establishment in the executive branch of the state government of a State Department of Health in which there shall be a Public Health Council authorized, among other things, to promulgate regulations which would constitute the State Sanitary Code. A. 66, to amend the law relating to divorce, proposes to authorize the granting of a divorce when either of the parties to the marriage has become incurably insane, provided that the person has been confined in an insane asylum for at least five years prior to the commencement of the action for divorce and provided further that it shall appear to the satisfaction of the court that the insanity is incurable, such satisfaction being based on the testimony of at least two reputable physicians. A. 90, to amend the workmen's compensation law, proposes, among other things, to authorize an injured employee to select to treat him any duly licensed physician, who must be recompensed by the employer. S. 75 proposes the enactment of an unemployment and cash sickness compensation law. S. 95, to amend the medical practice act, proposes that any applicant for a license to practice medicine and surgery who has been examined and licensed by the examining and licensing board of another state or by the National Board of Medical Examiners may be licensed without further examination provided he furnishes proof that for a period of at least one year within the period commencing Dec. 7, 1941 and ending Aug. 14, 1945 he has, while a commissioned officer of the medical corps of either the United States Army, the Army of the United States, the United States Navy, the United States Naval Reserve or the United States Coast Guard practiced medicine and surgery in the performance of his duties.

Bill Passed.—A. 69 passed the assembly February 11. It proposes to authorize the establishment and maintenance of blood banks to collect, process, store and distribute human blood and the various human blood derivatives, including special therapeutic and diagnostic serums, which are deemed of value in the treatment of sick and injured persons, and the prevention of certain diseases.

New York

Bills Introduced.—A. 896 and S. 830, to amend the law relating to the practice of optometry, propose that applicants must be citizens of the United States or must have declared an intention of becoming such. A. 898 and S. 827, to amend the law relating to the practice of podiatry, propose that applicants must be citizens of the United States or must have declared an intention of becoming such. A. 899 and S. 829, to amend the law relating to the practice of dental hygiene, propose that applicants must be citizens of the United States or must have declared an intention of becoming such. A. 983 and S. 821, to amend the penal law in relation to the right to dissect the dead body of a human being, propose that the husband, wife or next of kin of the deceased, when authorizing a dissection, shall do so by written instrument which shall specify the purpose and extent of the dissection so authorized. A. 1167, to amend the law in relation to hypnotic and somnifacient drugs, proposes to prohibit a pharmacist or druggist from furnishing a copy of the prescription to the patient. A. 1204, to amend the law relating to privileged communications, proposes to authorize a waiver of the privilege to be made in any litigation where the individual interests of the personal representative of a deceased person are deemed by the trial judge to be adverse to the interests of the estate. S. 755 proposes the enactment of a disability benefit law. "Disability" would be defined as "the incapacity on any day of a person to perform any employment because of physical or mental conditions." S. 801, to amend the unemployment insurance law, proposes to remove the exemption of charitable, scientific, literary or educational institutions therefrom. S. 802, to amend the unemployment compensation law, proposes that the illness or disability causing unemployment shall be certified under oath by a physician or surgeon duly licensed to practice in the state of New York or in any other state, territory or possession of the United States. S. 975, to amend the workmen's compensation law, proposes to authorize an injured claimant to have free choice of a duly authorized hospital for treatment of his injuries.

Bill Passed.—S. 556 passed the senate February 11. To amend the law in relation to hospital liens, it proposes that such liens shall not include personal services rendered by a physician or surgeon and that the rates charged by the hospital shall be deemed equivalent to the scheduled rates currently approved by the industrial commissioner and the superintendent of insurance for cases under the workmen's compensation law.

Virginia

Bills Introduced.—S. 149 proposes the creation of hospital authorities to engage in hospital construction, maintenance and operation. S. 166, to amend the law relating to hypnotic drugs, proposes that the words "dangerous drugs" shall include, in addition to preparations already so included, "Hormones, or hormone drug preparations, whether of natural origin, prepared from the so-called glands of internal secretion or endocrine glands, or whether synthetically produced, by whatsoever trade name or designation, or any compound or mixture thereof; except preparations intended for external use containing hormones in combination with other ingredients unfit for internal administration." No person would be able to sell or give away any such drug except on the prescription of a doctor of medicine, doctor of dental surgery or doctor of veterinary surgery, lawfully practicing his profession, and prescriptions for hormones could, on written authorizations on the face of the prescription by the prescriber, be refilled a definite number of times as indicated.

Washington Letter

(From a Special Correspondent)

Feb. 18, 1946.

Controversial Legislation Before Congress

Among controversial items of legislation slated for consideration by Congress during the coming week are extension of the Office of Price Administration past June 30, universal military training and the federal school lunch program. The House Military Affairs Committee today begins the final week of hearings on universal military training legislation. There is considerable opposition to the bill to make permanent the federal school lunch program, being considered by the House. Opponents consider it the first definite step toward federal control of public schools. Hearings will continue on efforts of President Truman to have Edwin Pauley nominated as Undersecretary of the Navy, which has already resulted in resignation of Interior Secretary Ickes.

Use of Hospital Ships for Veterans Proposed

Until the hospital program of the Veterans Administration provides more beds, floating hospital ships are the answer to the acute shortage of facilities for veterans, according to Senator Mead, Democrat of New York. He said that both the Army and the Navy have excess hospital ships which could be used. Some ships are now being used to transport war brides to this country. War Secretary Patterson authorized General Omar N. Bradley to announce that army engineers will take over the bulk of construction on the agency's $448,000,000 "skyscraper" hospital building program. Bradley described it as "the most gigantic hospital building program in the history of the world" and estimated that with the help of the engineers the hospitals could be completed in eighteen months to two years. Veterans are to have 183 permanent hospitals with a capacity of 151,500 beds. General Bradley also proposes a nationwide system of home town medical and hospital care for disabilities traceable to military service.

Red Cross Sees Busy Peacetime Role

The Red Cross estimates that its services to discharged veterans of the war will not reach their peak until 1975, basing this on the fact that veterans of 1918 are still asking help from the Red Cross in larger numbers than ever before. The organization reports that since Pearl Harbor 500,000 victims of domestic disasters have been given food, clothing, shelter and medical care. A total of $7,200,000 was spent meeting their needs. Through Red Cross educational programs 1,400,000 certificates were issued to students in home nursing, 700,000 in nutrition and 1,200,000 in water safety.

Lack of Progress in Preventing Deafness

Failure of the medical profession to make progress in preventing deafness was deplored by Vice Admiral Ross T. McIntire, Surgeon General of the Navy, addressing the twenty-fifth anniversary meeting of the Washington Society of the Hard of Hearing. Admiral McIntire said that virtually no headway had been made in this field in fifty years except in deafness related to disease. He reported that the Navy is now engaged in research at the Philadelphia Naval Hospital, where hard of hearing patients among naval and Marine Corps personnel are treated.

Army Cuts Physical Standards to Obtain 75,000 Men

The U. S. Army has lowered its physical standards so that 75,000 men once rejected can be called up for manpower needs, the War Department announces. The men will be obtained from the pool of 1,250,000 nonfathers from 18 through 25 years of age. These are classified mostly in 4-F but also include some classes in 2-A-L, 2-A-F, 2-C-L and 2-C-F.

Refutation of Charges of Cruelty in Animal Experimentation

Although one segment of the local press is agitating for anti-vivisection legislation in the District of Columbia, another newspaper has produced evidence that a dog on an operating table for experimental purposes received scientific pain prevention equal to that administered to a human being. The Army is quoted as follows: "No research capable of inflicting pain or suffering may be undertaken unless the animals are suitably anesthetized, or other steps have been taken to prevent suffering." Friends of Medical Research is quoted: "There is always anesthesia in an operation on a living creature. . . . Doctors study dogs to learn about human beings. . . . The law now safeguards all animals used in research. A laboratory dog is prepared for an operation with the care accorded a human being. It is also pointed out that army research is conducted in connection with established medical centers whose rules and regulations govern the investigators.

"Quick" Treatments Blamed for Increase in Venereal Disease

Dr. William P. Herbst, president of the Social Hygiene Society, stated here that quick, comparatively painless treatments for venereal disease have removed the "fear deterrent" and caused a "noticeable increase in reinfection." Dr. Ross Taggart, director of the Venereal Disease Bureau, also stated that since quick cures had been used an increasing number of patients had been returning for treatment as often as six times a year.

Extension of Planned Parenthood Urged

An international policy to balance population growths of the world was urged by D. Kenneth Rose, executive director of the Planned Parenthood Association of America in a luncheon meeting here. He advocated continued efforts to spread the planned parenthood doctrine in the United States, where he said increasing abortions currently are responsible for two thirds of maternity deaths and where two thirds of the children are born in the lowest economic group.

Surplus Medical Supplies for Veterans' Hospitals

The U. S. Army will retain enough surplus medical supplies and equipment for 100,000 veterans' hospital beds, it is reported here. A stockpile valued at $30 million includes about fifty critical materials. The Veterans Administration will get the materials for five years but will be allowed only twelve months' supply at a time to permit release of some for civilian medical uses.

Coming Medical Meetings

Aero Medical Association, Chicago, April 7-9. Dr. David S. Brachman, 1016 Dime Building, Detroit 26, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 16-18. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association of Anatomists, Cleveland, April 4-6. Dr. Eliot R. Clark, University of Pennsylvania School of Medicine, Philadelphia 4, Secretary.

American Association of Pathologists and Bacteriologists, Chicago, March 8-9. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Physiological Society, Atlantic City, March 11-15. Dr. Wallace O. Fenn, 260 Crittenden Blvd., Rochester 7, New York, Secretary.

American Society for Experimental Pathology, Atlantic City, March 11-15. Dr. Harry P. Smith, 630 W. 168th St., New York 32, Secretary.

American Society for Pharmacology and Experimental Therapeutics, Atlantic City, March 11-15. Dr. Raymond N. Bieter, University of Minnesota Medical School, Minneapolis, Secretary.

American Surgical Association, Hot Springs, Va., April 2-4. Dr. Warfield M. Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.

Arkansas Medical Society, Little Rock, April 14-15. Dr. W. R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Chicago Medical Society Annual Clinical Conference, Chicago, March 5-8. Dr. Warren W. Furey, 30 North Michigan Ave., Chicago 2, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 18-21. Dr. John G. Young, 1719 Pacific Avenue, Dallas 1, Director of Clinics.

Federation of American Societies for Experimental Biology, Atlantic City, March 11-15. Dr. D. R. Hooker, 19 West Chase Street, Baltimore 1, Secretary.

Iowa State Medical Society, Des Moines, April 17-19. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Medical Library Association, New Haven, Conn., March 25-27. Miss Frida Pliefke, 2000 Medical Arts Bldg., Minneapolis 2, Secretary.

Missouri State Medical Association, St. Louis, March 24-26. Dr. Ralph L. Thompson, 634 N. Grand Blvd., St. Louis 3, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, April 1-4. Dr. Joseph S. D'Antoni, 1430 Tulane Ave., New Orleans 13, Secretary.

Postgraduate Institute of the Philadelphia County Medical Society, Philadelphia, April 9-12. Dr. George P. Muller, 301 S. 21st St., Philadelphia, Director.

Southeastern Surgical Congress, Memphis, Tenn., March 11-13. Dr. Benjamin T. Beasley, 45 Edgewood Ave. S.E., Atlanta 3, Georgia, Secretary.

Tennessee State Medical Association, Knoxville, April 9-11. Dr. W. M. Hardy, 706 Church Street, Nashville, Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

New Bureau of Hospital Inspections.—Dr. Julius B. Askew, on assignment to the California Department of Public Health by the U. S. Public Health Service, has been appointed chief of a new bureau of hospital inspections.

Personal.—Dr. Donovan O. Kraabel, formerly medical director at the Santa Rosa army air base, has been appointed medical director of the Sonoma County Hospital.——Dr. Allen E. Stamler has been appointed health officer of Corcoran in Kings County, succeeding Dr. Ernest C. Foster.——Dr. Rudolph B. Toller, Benedict, has been appointed superintendent of the Stockton State Hospital, succeeding Dr. Margaret H. Smyth, and Dr. Melvin J. Rowe superintendent of the Norwalk State Hospital, succeeding Dr. Edwin Wayte. The changes will take effect March 1, after which both Dr. Smyth and Dr. Wayte will be retired.

Changes in State Health Department Staff.—Dr. Malcolm H. Merrill, San Francisco, has been appointed deputy director of the California Department of Public Health, continuing as chief of the division of laboratories, a position he held since 1941. Dr. Merrill joined the department in 1937 as chief of the then newly formed bureau of venereal diseases. The position of chief of the division of medical services is now occupied by Dr. Robert Dyar, Stockton, recently released from the Army Air Force. Prior to his entering service in April 1942 Dr. Dyar directed the joint syphilis epidemiologic study in San Joaquin Local Health District, which was sponsored by the international health division of the Rockefeller Foundation, the health district and the state department of public health. Dr. Philip K. Gilman, San Anselmo, president of the California Medical Association, has been appointed chief of hospital surveys of the department.

ILLINOIS

Study of Dental Caries.—Fluorine will be added to the drinking water in Evanston in a new study conducted jointly by the Evanston Health Department, the Walter G. Zoller Memorial Dental Clinic, University of Chicago, and the department of public health dentistry of the Illinois State Health Department to study its effect on the incidence of dental caries. The superintendents of the schools have agreed to cooperate in making dental examinations of school children. The study in Evanston is based largely on the 1939 epidemiologic studies of the U. S. Public Health Service of school children of Evanston, Oak Park and Waukegan, communities which use fluorine-free Lake Michigan water; and Aurora, Elmhurst, Joliet and Maywood, which obtain their water from deep wells containing approximately 1 part per million of fluorine. Their findings indicate that those using fluorine-free water experienced about 2.6 times more dental decay than those drinking water containing fluorine. In order to determine the present incidence of tooth decay in Evanston, all school children in the age range of 6 to 8 and 12 to 14 years inclusive will be examined before fluorine in the concentration of 1 part per million is added to the drinking water. Reexaminations will be made at one or two year intervals and the results compared as the study progresses. The study will be continued until at least one group of children who have been exposed to fluorine throughout their entire life—prenatal and postnatal—have reached the age of 14. Each examination is to be made with care in order that as many as possible of the very early carious lesions of the proximal surfaces may be found and recorded. An x-ray examination is to be made at the time of the clinical examination. This is for the purpose of discerning those carious processes which are too small to be recognized by clinical methods. Chemical analyses of the food available in Evanston markets will be made from time to time in order to determine the fluorine content. Very frequent chemical analyses for the determination of the fluorine content of the water obtained in all parts of the city will be made. Samples of deciduous teeth which are shed and permanent teeth which must be extracted will be used to determine the amount of fluorine deposited in the dental tissues. The study as well as the methods employed has been approved by the appropriate committees of the North Suburban Branch of the Chicago Dental Society and the North Suburban Branch of the Chicago Medical Society. It is to be hoped that such a detailed study will give considerable information of value on the control of dental decay by the use of public health methods.

Chicago

Clinical Conference.—The Chicago Medical Society will hold its second clinical conference at the Palmer House, March 5-8. Among the speakers will be:

Dr. Stanley Gibson, The Significance of Heart Murmurs in Children.
Dr. Albert C. Furstenberg, Ann Arbor, Mich., Conservation of Hearing.
Dr. Wingate M. Johnson, Winston-Salem, N. C., The Management of Patients with Ulcer.
Dr. Charles C. Lund, Boston, Burns.
Dr. Kendall Emerson, New York, Tuberculosis.
Dr. Robert L. Sanders, Memphis, Tenn., The Management of Obstructive Lesions of the Colon.
Dr. Irvine H. Page, Cleveland, Hypertension.
Dr. Eben J. Carey, Milwaukee, Progressive Muscular Dystrophy.
Dr. Roger I. Lee, Boston, Geriatrics.
Dr. Elexious T. Bell, Minneapolis, Nephritis.
Dr. Peter C. Kronfeld, Eye Conditions that Should be Recognized by General Practitioners.
Dr. Theodore L. Squier, Milwaukee, Hay Fever and Asthma.
Dr. Joseph H. Chivers, Coordination of the Activities of the Industrial Physician and the Private Physician.
Drs. Woodruff L. Crawford, Nordahl O. Gunderson and Edward H. Weld, all of Rockford, Ill., Polio Epidemic at Rockford.
Ancel B. Keys, Ph.D., Minneapolis, Experimental Studies of Starvation on Men.
Dr. Walter C. Popp, Rochester, Minn., X-Ray Therapy of Acute Infections.
Dr. Edward Tolstoi, New York, The Management of the Healthy and Sick Diabetic.
Dr. Herman L. Kretschmer, Kidney and Ureteral Stones.
Dr. Priscilla White, Boston, Diabetes and Pregnancy.
Major W. Allen Conroy, M. C., Anesthesia.
Dr. Henry H. Turner, Oklahoma City, Endocrine Problems of Childhood.
Dr. Charles Mazer, Philadelphia, Endocrine Regulation of Menstruation and Menstrual Irregularities.
Dr. Jean P. Pratt, Detroit, Endocrine Disorders of Pregnancy.
Dr. Ernest P. McCullagh, Cleveland, Climacteric—Male and Female.
Dr. Owen H. Wangensteen, Minneapolis, The Surgeon and the Ulcer Problem.
Dr. Earle B. Mahoney, Rochester, N. Y., Shock.
Dr. Robert Elman, St. Louis, Preoperative and Postoperative Care.
Dr. Sidney Farber, Boston, Some Chronic Diarrheal Disorders in Young Children.
Col. Thomas T. Mackie, M. C., Washington, D. C., Tropical Diseases.
Dr. Roy R. Grinker, Indications for Specific Types of Psychiatric Treatment.
Dr. Hobart A. Reimann, Philadelphia, Antibiotics.
Dr. Claude S. Beck, Cleveland, Surgery of the Heart.
Dr. Harrison H. Shoulders, Nashville, Tenn., The Soul of Medicine.
Dr. Louis Schwartz, Bethesda, Md., Vocational Dermatoses.
Lieut. Col. James J. Callahan, M. C., Washington, Treatment of Fractures.
Dr. George T. Pack, New York, The Extension of Radical Surgery in the Treatment of Cancer.
Dr. William D. Stroud, Philadelphia, Coronary Disease.
Dr. Edward W. Boland, Los Angeles, Rheumatoid Arthritis of the Spine.

A panel on hematology will be presented with Dr. Robert W. Keeton as moderator and the following speakers: Drs. Howard L. Alt, Israel Davidsohn, Raphael Isaacs, Louis R. Limarzi and Steven O. Schwartz. A feature of the conference will be the presentation of certificates of appreciation to three "veterans of medicine in Chicago," Dr. Ludvig Hektoen, 82 years of age, emeritus professor of pathology, Rush Medical College; Dr. Isaac Arthur Abt, 78 years of age, emeritus professor of diseases of children, Northwestern University Medical School, and Dr. James B. Herrick, 84 years of age, emeritus professor of medicine, University of Illinois College of Medicine. On Thursday evening the principal dinner speaker will be Col. Philip Cochran on "Experience in Burma." The program also includes a luncheon each day with round table discussions by speakers from the morning session.

KANSAS

Changes in Health Personnel.—Dr. Leon Bauman has been appointed full time health officer of Labette County, succeeding Dr. Oscar Harvey, Parsons, who was transferred by the U. S. Public Health Service to Sioux Falls, S. D. Dr. Donald E. Bux, Manhattan, who was recently released from military service, has been named health officer of Cherokee County. Ferrin B. Moreland, Ph.D., Iowa City, has been placed in charge of the department of chemistry, division of public health laboratories, Kansas State Board of Health.

Health Education Workshop.—A health education workshop sponsored by the state department of education, the state department of health and Kansas State University will be held at the university, Lawrence, July 8-12. The purpose of this workshop is to provide teachers, parents, supervisors, custodians and students an opportunity for intensive study of school and community health problems affecting the health and edu-

cation of the child. Study groups and individual conferences may be planned wherein school, home and health personnel may discuss common problems with the hope that a better understanding of the total health education program may result.

KENTUCKY

Commonwealth Fund Visiting Professorships.—Dr. John W. Moore, dean of the University of Louisville School of Medicine, on February 5 announced a group of commonwealth visiting professorships that have already participated in the current school year:

Capt. David B. Foster, M. C., Battle Creek, Mich., visiting professor of neurology and neurologic surgery.
Dr. Carl J. Wiggers, Cleveland, visiting professor of physiology.
Lieut. Col. Brian Blades, Washington, D. C., visiting professor of surgery.
Dr. Carl C. Speidel, Charlottesville, Va., visiting professor of anatomy.

All visiting professors have given special lectures to the students and staff on subjects chosen from their own studies. Those of them with clinical interests have held special clinics and ward rounds, while the visitors with laboratory interests have given laboratory demonstrations of special technics. All visiting professors have been selected as guest speakers at the regular meetings of the Jefferson County Medical Society.

MARYLAND

Winford Smith Leaves Johns Hopkins Hospital.—Dr. Winford H. Smith, since 1911 director of Johns Hopkins Hospital, Baltimore, has announced his retirement, effective March 31. Dr. Edwin L. Crosby Jr., assistant director since 1940, has been named to succeed Dr. Smith. The latter graduated at Johns Hopkins University School of Medicine in 1903 and Dr. Crosby at Albany Medical College in 1933.

MISSOURI

Society to Receive Bequest Under Physician's Will.—The will of Dr. Paul F. Stookey, Kansas, who died in November, provided that after his widow's death half of the estate should go to St. Mary's Hospital and half to the building fund of the Jackson County Medical Society.

Loan Fund Named for Iberia Physician.—Iberia Junior College recently created a loan fund to assist young men and women to become physicians and nurses in memory of the late Dr. John L. Benage, one of the alumni of the college. The physician, who died in June 1945, graduated in a class of five at the college in 1895. In 1901 he graduated at St. Louis College of Physicians and Surgeons, entering private practice in Iberia the same year. In 1914 he moved to Lebanon.

State Medical Meeting.—The Missouri State Medical Association will hold its scientific meeting at the Jefferson Hotel, St. Louis, March 24-26 under the presidency of Dr. Arthur S. Bristow, Princeton. Included in the program, which has been divided into four sessions, on blood, on the chest, on the kidney and hypertension and on electrolyte and water balance, are:

Dr. Harry Agress, St. Louis, Experiences with Blood Banking in Europe and Application of Blood Banks to Civilians.
Dr. Henry C. Allen, St. Louis, Clinical Significance of the Rh Factor.
Dr. Leo J. Wade, St Louis, Recent Observations on Anemia in Scurvy.
Dr. Carl V. Moore, St. Louis, The Antianemic Activity of Folic Acid.
Dr. Jay A. Myers, Minneapolis, Tuberculosis.
Dr. Ralph A. Kinsella, St. Louis, The Pneumonias.
Dr. Evarts A. Graham, St. Louis, Chest Tumors.
Dr. James L. Mudd, St. Louis, Chronic Suppurations.
Lieut. Col. Brian B. Blades, St. Louis, War Injuries to the Chest.
Dr. Leroy Sante, St. Louis, X-Ray of Chest.
Dr. Burton E. Hamilton, Boston, The Heart in Pregnancy.
Dr. William H. Olmsted, St. Louis, Recent Advances in Renal Function Tests.
Dr. Edward Massie, St. Louis, Clinical Correlations Between the Kidney and Hypertension.
Dr. Dalton K. Rose, St. Louis, Renal Lithiasis: Recent Advances in Treatment.
Dr. Edward H. Reinhard, St. Louis, Renal Insufficiency in Extrarenal Disease.
Dr. Raywood O. Muether, St. Louis, Normal Mechanisms and Methods of Administration and Dangers.
Dr. Alexis F. Hartmann, St. Louis, Problems in Pediatrics.
Dr. Robert Elman, St. Louis, Problems in Surgery.
Dr. James B. Stubbs, St. Louis, Problems in Medicine.

NEW JERSEY

Society of Surgeons.—The Society of Surgeons of New Jersey held its annual meeting in Plainfield January 30. Among the speakers were:

Dr. William B. Fort, Plainfield, Gynecology in the Child Bearing Period.
Dr. Paul Geary, Plainfield, Surgical Treatment of Thoracic Disease.
Dr. Nathaniel B. Stanton, Plainfield, A Device to Simplify End to End Anastomosis of the Large Bowel.
Dr. Thomas M. Morris, Plainfield, Urologic Accidents During Abdominal Surgery.

Treatment of battle casualties in World War II was discussed by Drs. Charles A. Hoffman, Plainfield, Charles T. Steffens, Dunellen, and Spencer T. Snedecor, Hackensack. Major Gen. Norman T. Kirk, surgeon general of the Army, addressed the dinner meeting on "The Remaining Task." Dr. Joseph H. Oram, Paterson, was elected president of the society and Dr. Walter B. Mount, Montclair, reelected secretary.

NEW YORK

Physician Honored for Twenty-Five Years' Service.—Dr. David B. Jewett, Rochester, was given a tea January 16 to observe his recent completion of twenty-five years' service as chief of the medical service of Genesee Hospital. According to the Rochester *Democrat and Chronicle* Dr. Jewett, who has been associated with Genesee Hospital since he served his internship there, has been named emeritus director of medicine, a newly created position. Dr. Charles Boller, Rochester, formerly a member of the medical staff, is the new medical director.

Spa Water Used in Therapy of Rheumatic Disease.—A long term experiment on treatment of chronic rheumatic ailments at the Saratoga Spa was inaugurated January 16 by Dr. Walter S. McClellan, Saratoga Springs, medical director. A group of patients with various rheumatic conditions will receive a series of treatments involving use of natural spa mineral water and water fortified with additional radioactive substances. The Saratoga Spa is owned by the state.

Public Meeting on Cancer.—February 28 has been designated cancer teaching day in Jamestown. The program, which is presented under the auspices of the Medical Society of the County of Chautauqua, the Jamestown Medical Society, the Medical Society of the State of New York and the state division of cancer control, will be conducted by:

Dr. Louis C. Kress, Buffalo, What the Public Should Know About Cancer.
Dr. Clyde L. Randall, Buffalo, Malignancies of the Uterus.
Dr. Samuel J. Stabins, Rochester, Cancer of the Breast.

Prizes to Be Awarded.—The Merrit H. Cash Prize and the Lucien Howe Prize will be open for competition at the next annual meeting of the Medical Society of the State of New York. The Lucien Howe Prize of $100 will be presented for the best original contributions on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York. The Merrit H. Cash Prize of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of competition are residents of New York. All essays must be presented not later than April 1 and sent to Dr. Gordon Heyd, chairman of the committee on prize essays of the Medical Society of the State of New York, 292 Madison Avenue, New York 17.

New York City

Rabies Quarantine Extended.—The New York City State Department of Health has continued its antirabies quarantine in the boroughs of Brooklyn and Queens for a period not exceeding six months from February 3.

The Rothschild Lecture.—Selman A. Waksman, Ph.D., microbiologist, Agricultural Experiment Station, New Brunswick, N. J., will give the eighth Marcus A. Rothschild Lecture at Beth Israel Hospital, March 6, on "Streptomycin: Isolation, Nature and Application."

The John Wyckoff Lectures.—Dr. Eugene M. Landis, George Higginson professor of physiology, Harvard Medical School, Boston, gave the John Wyckoff Lectures on "Interactions of Vascular Volume and Circulatory Function" at the New York University College of Medicine. The first lecture was given January 17 on "Quantitative Aspects of Vascular Volume and Acute Circulatory Failure" and the second January 18 on "Cardiac 'Competence,' Venous Pressure and Vascular Volume in Relation to Exercise and Plethora."

Beth Israel Hospital Joins New York University in Postgraduate Work.—Beth Israel Hospital, under the direction of Dr. Maxwell S. Frank, medical director, is now participating in the postgraduate division of New York University College of Medicine. Dr. William Goldring, associate professor of medicine at the medical school, has been appointed liaison officer between the college and the hospital. For many years undergraduate elective courses in internal medicine have been given at Beth Israel Hospital. Under the more active affiliation, postgraduate courses may be offered in all services of the hospital. Plans are also being considered whereby residents at the hospital can secure training in the sciences at the college.

Personal.—Dr. Arthur C. Allen, who has served in the Army of the United States for the past three and a half years as pathologist at the Army Institute of Pathology, Washington, D. C., has been appointed associate professor of pathology at New York Medical College, Flower and Fifth Avenue Hospitals.——Dr. Eleanor M. A. Campbell, co-founder of the Judson Health Center, was guest of honor at a reception January 15 given in recognition of the twenty-fifth anniversary of the establishment of the health agency. Dr. Campbell founded the center twenty-five years ago with the late A. Ray Petty, pastor of the Judson Memorial Church.——Dr. Michael Lake has returned from a military leave of absence to his position of medical director of Macy's.

Premedical Society Affiliates with Alpha Epsilon Delta.—Skulls, premedical society of Cornell University Medical College, on January 12 became affiliated with Alpha Epsilon Delta, national honorary premedical fraternity, on installation as the New York Alpha chapter. The initiation of twenty-three active and five honorary members was conducted by Hugh E. Setterfield, Ph.D., associate professor of anatomy at Ohio State University College of Medicine, Columbus, and national president of Alpha Epsilon Delta, and Maurice L. Moore, Ph.D., assistant director of research, Frederick Stearns and Company Division, and national secretary. Skulls was organized at Cornell during the fall of 1927 under the auspices of Dr. James W. Papez, professor of anatomy, Cornell University Medical College, and with its installation became the thirty-fifth chapter of Alpha Epsilon Delta.

NORTH CAROLINA

Personal.—Dr. Basil T. Bennett, Jr., Trenton, Tenn., has been appointed medical director of Highland Hospital, Asheville, to succeed Dr. Robert S. Carroll, founder of the hospital. Dr. Otto Billig, Asheville, has been named clinical director. The hospital was founded by Dr. Carroll in 1904 under the name of Carroll's Sanitarium; in 1912 its name was changed to Highland Hospital and in 1940 the hospital was given to Duke University School of Medicine, Durham, to be used in connection with its department of psychiatry.——Dr. Roy McKnight, Charlotte, is the new president of the North Carolina State Board of Medical Examiners.

William Fleming Goes to Boston.—Dr. William L. Fleming, research professor of syphilology of the University of North Carolina School of Public Health, Chapel Hill, since 1939, resigned on Dec. 31, 1945 to become chief of the genito-infectious clinic and associate professor of medicine at the Boston University School of Medicine, Boston, effective January 1. Dr. Harold J. Magnuson, Baltimore, passed assistant surgeon of the U. S. Public Health Service, has been appointed research professor of experimental medicine in the School of Public Health, succeeding Dr. Fleming. Dr. Magnuson has been first assistant to Dr. Harry Eagle in the experimental syphilis laboratories at Johns Hopkins University since 1943.

OHIO

Claude Perry Named Acting Chairman of Department.—Dr. Claude S. Perry, Columbus, has been named acting chairman of the department of ophthalmology, Ohio State University College of Medicine, Columbus, with the rank of associate professor. Dr. Albert D. Frost, professor and head of the department of ophthalmology, died Nov. 15, 1945.

Personnel Changes of State Association.—Mr. George H. Saville, who joined the headquarters staff of the Ohio State Medical Association in May 1935 as assistant executive secretary, has been named director of the department of public relations of the association, effective January 1. The position has been vacant since March 1, 1943. Mr. Saville, who will continue as assistant executive secretary, has been serving also as news editor of the *Ohio State Medical Journal*. Mr. Hart F. Page has been named to fill this position and serve as assistant to the director of public relations. Mr. Page was recently released from the navy.

Mental Health for Every One.—The Welfare Federation of Cleveland devoted four sessions to the discussion of mental health at its fourth annual health and welfare institute in the Carter Hotel, Cleveland, February 19. "Mental Health for Every One" was the theme of the sessions. At one session on "Mental Health in the Wake of War" Dr. Douglas D. Bond, director of the division of psychiatry at University hospitals, Cleveland, was chairman, and speakers included Lieut. Col. Oscar B. Markey, Cleveland, consultant in psychiatry for the United States 10th Army; Dr. Ewing H. Crawfis, Lima, superintendent of Cleveland State Hospital and consultant to Selective Service boards, and Dr. Edward J. Humphreys, assistant director of the Ohio state division of mental hygiene.

PENNSYLVANIA

Geisinger Hospital Receives $100,000.—The George F. Geisinger Memorial Hospital, Danville, has received a gift of $100,000 from Mr. C. S. Woolworth, recent chairman of the board of the Woolworth stores. The gift is an outright one and is to be used for any purpose to which the trustees wish to put it. Mr. Woolworth has been a member of the advisory board of the hospital for many years.

Secretaries' Conference.—The Medical Society of the State of Pennsylvania will conduct a Secretaries-Editors Conference at the Penn-Harris Hotel, Harrisburg, March 7-8. The program will include the following speakers:

Drs. Francis F. Borzell, Philadelphia, Joseph W. Post, Philadelphia, and Louis W. Jones, Wilkes-Barre, Public Relations à la 1946.
Dr. Louis H. Bauer, Hempstead, N. Y., Medical Care for the American People Through Implementing the Profession's Program.
Major General Paul R. Hawley, M. C., Washington, D. C., Medical Care—Shall the Veteran Have Free Choice of Physician?
Dr. John A. Daugherty, Harrisburg, Pa., Medical Service Association of Pennsylvania.

Philadelphia

Hospital Provides Space for Returning Staff Members.—The Pennsylvania Hospital has established the Clinton Street Building to provide office space for members of its staff and especially returning medical officers connected with the institution.

Appointments at Temple.—Dr. Curtiss B. Hickox, Hartford, Conn., has been appointed professor and head of the department of anesthesiology at Temple University School of Medicine and Hospital. Dr. Dean A. Collins has been named professor of physiology, of which department Dr. Morton J. Oppenheimer is head.

Joseph Hughes Named Professor of Psychiatry.—Dr. Joseph T. Hughes, who has been serving in the U. S. Navy since 1943 and recently as chief of the neuropsychiatric service at the Philadelphia Navy Hospital, has been appointed professor of psychiatry at the Woman's Medical College of Pennsylvania to succeed the late Dr. Harold D. Palmer. Dr. Hughes graduated at the University of Pennsylvania School of Medicine in 1929.

Centennial Meeting of Society.—The Northern Medical Association of Philadelphia, second oldest medical society in the city and founded in 1846, will celebrate its centennial anniversary December 5 under the presidency of Dr. Myer Solis-Cohen, assistant director of health of Philadelphia. A special centennial committee has been named, of which Dr. Maurice S. Jacobs is the general chairman. The committee consists of the 1946 officers and the past presidents of the society. The 1946 president, Dr. Solis-Cohen, is the son of the late Dr. Jacob Solis-Cohen, who was president in 1875.

The Diabetic Survey.—Between December 1 and January 15, 296 diabetic patients were given x-ray examinations at the photofluorographic unit installed in the Maloney Building of the University of Pennsylvania Hospital as a part of the survey of diabetic patients carried on by Philadelphia health authorities (THE JOURNAL, Nov. 10, 1945, p. 758). Of the group x-rayed, 230 have been clinic patients and 66 private patients. Arrangements have been made for the diabetic clinic patients at Woman's Hospital and Presbyterian Hospital to be x-rayed while the unit is in the Maloney Building, where it will be located through February 28, when it will be moved to the metabolic division at the Philadelphia General Hospital.

TEXAS

Alpha Omega Alpha Lecture.—Dr. Edward L. King, professor of obstetrics, Tulane University of Louisiana School of Medicine, New Orleans, delivered the annual Alpha Omega Alpha Lecture at the University of Texas Medical Branch, Galveston, January 31 on "Clinical Aspects of the Rh Factors."

Personal.—Dr. and Mrs. J. G. Dodge, Abilene, observed their golden wedding anniversary recently.——Dr. Edward B. Rickey, Shafter, has been appointed director of the Jim Wells-Duval County Health Unit, Alice.——Dr. Sidney W. Bohls, Austin, director of the bureau of laboratories for the Texas State Department of Health, has resigned.

Special Society Election.—At a meeting of the Texas Society of Pathologists in Dallas, January 27, Dr. David A. Todd, San Antonio, was named president-elect. Other officers are Dr. May Owen, Fort Worth, president; Dr. Sidney W. Bohls, Austin, vice president; Dr. Charles T. Ashworth, Dallas, secretary, and Dr. Atticus J. Gill, Dallas, assistant secretary. The next meeting of the society will be held in Galveston, May 5.

VERMONT

Grants for Research.—The University of Vermont College of Medicine, Burlington, announces the following grants to its department of biochemistry: Armour and Company of Chicago have given a $2,000 grant to Edwin E. Hays, Ph.D., St. Louis, for studies on anemia. Grants given to the department of biochemistry for studies to be conducted under the direction of Harold B. Pierce, Ph.D.; assisting in the studies are Drs. Chester A. Newhall, Thomas B. Tomasi and Theodore H. Harward, all of Burlington. Miss Susan B. Merrow has been appointed nutritionist, R. F. Krause and Mrs. Ruth Law chemists and Mrs. M. B. Shepard assistant in the department. Milbank Memorial Fund, $17,700 for a two year study of the nutritional status of Vermont children. Merck and Company, Inc., $6,300 for a one year study of folliculosis among children.

VIRGINIA

Hospital Board Awards Prizes.—The Virginia State Hospital Board recently awarded prizes to physicians in the several state hospitals for meritorious papers submitted on varying subjects. Dr. Edgar L. Crumpacker, Roanoke, who is now on leave from the Eastern State Hospital in military service, and Dr. Walther Riese, Williamsburg pathologist for the hospital, won first prize of $225 for a paper on "Studies in Brain Tumors." Dr. Paul Zwick, Manon, of the Southwestern State Hospital, won second prize of $125 for a paper entitled "Study of a Case of Fire Setting," and Dr. Vincent E. Lascara, Petersburg, of Central State Hospital, third prize of $50 on "A Study of the Use of Penicillin in the Treatment of Neurosyphilis." This is the second award made by the board (THE JOURNAL, Feb. 27, 1943, p. 693).

WASHINGTON

Personnel Changes in State Health Department.—Dr. Ralph R. Sachs, Richland, was appointed head of the field consultant section in the division of local health services, Washington State Department of Health, effective January 14. He was formerly public health supervisor for the Hanford Engineer Works, Washington's atomic bomb project. He graduated at Wayne University College of Medicine, Detroit, in 1937. Mr. Ralph L. Nielsen was recently appointed director of the hospital survey and health center facilities throughout the state as a prerequisite for formulating a plan for the coordinated development of hospital facilities. Mr. Nielsen was formerly assistant agriculture economist for the southwest region of the U. S. Department of Agriculture and was stationed at Berkeley, Calif.

WEST VIRGINIA

Annual Health Conference.—The annual state health conference will be held at the Prichard Hotel, Huntington, May 2-4. The state health department has already arranged for exhibits at the conference, and local health workers will be asked to provide displays. An institute for clerks of local health departments will be conducted in connection with the meeting to provide an opportunity for group discussion of current problems.

Personal.—Dr. Henry H. Hancock, Union, has been appointed by Governor Clarence W. Meadows as superintendent of the Andrew S. Rowan Memorial Home for aged and infirm white men and women at Old Sweet Springs, Monroe County, to succeed Dr. George P. Evans, Iaeger, who resigned effective February 1. Dr. Evans has served as superintendent since July 1, 1945. Previously he had been engaged in industrial practice at Iaeger in McDowell County.

Thomas Nale Goes to New York.—Dr. Thomas W. Nale, South Charleston, medical director at the South Charleston plant of the Carbide and Carbon Chemical Corporation, has been transferred to the New York office of the parent company, Union Carbide and Carbon Corporation, and will assume his new duties there shortly after the first of March. In New York Dr. Nale will be associated with Dr. Arthur G. Cranch, New York, toxicologist for the Union Carbide Company and serving as consultant in medical and toxicology problems for the medical directors of the various plants owned by the company. Dr. Nale has been medical director at the South Charleston plant since 1941. Previously he was connected with the state health department at Charleston.

Changes in Health Personnel.—Dr. Don V. Hatton, Williamson, has been appointed by the Public Health Council as full time county health officer for Mingo County. He succeeds Dr. Sixtus G. Bando, who is taking a course in public health at Johns Hopkins University School of Medicine, Baltimore. Dr. Charles Scott McKinley, Charleston, director of the bureau of industrial hygiene of the West Virginia State Health Department since May 1943, has resigned to accept appointment as medical director and plant physician for the Bakelite Company at Boundbrook, N. J., effective February 1. Dr. Clarence I. Butte Jr., Matoaka, recently returned from military service, has been appointed health officer for the city of Matoaka to succeed Dr. Frederic C. Goodall, who has moved to Princeton.

GENERAL

Examinations in Dermatology and Syphilology.—The American Board of Dermatology and Syphilology announces that the next oral examination for both A and B candidates will be held in San Francisco, June 28-29. The written examination for Group B will be held on April 22. The closing date for applications is March 1. Dr. George M. Lewis, 66 East 66th Street, New York, is secretary.

Planning Service for Children.—At least six state legislatures have set up special bodies to deal with services for youth. The states are Georgia, Illinois, Kentucky, Michigan, Missouri and New York. The program is being done in line with the proposal made by the National Commission on Children in Wartime in its recent recommendations for overcoming obstacles in planning for postwar needs.

Tests for Technicians.—The next examination by the American Orthoptic Council will be held in September and October. The written examinations will be held at various cities in the country, September 6. Only those passing the written examinations will be permitted to take the oral and practical tests, to be given in Chicago, October 12. Applications on official forms must be received before July 1. Address the American Orthoptic Council, 23 East 79th Street, New York 21.

The Kellersbergers Plan Tour for Mission to Lepers.—Dr. and Mrs. Eugene R. Kellersberger, New York, general and promotional secretaries respectively of the American Mission to Lepers, will begin a tour to certain points of the Western Hemisphere and Africa in March. They plan to return to the United States in the end of September. The tour is being made at the request of the board of directors of the American Mission to Lepers to strengthen the existing work and obtain more detailed information about it.

Director of Physical Medicine for Crippled Children.—Lieut. Col. George D. Wilson, on terminal leave from the army and formerly of Kernersville, N. C., has been appointed director of physical medicine for the National Society for Crippled Children and Adults, 11 South La Salle Street, Chicago 3. The appointment marks another step in the expanded program of the national society. Dr. Wilson will act in an advisory capacity in the society's program to assist communities throughout the country in meeting the medical problems posed by handicapped persons.

Meeting on Psychosomatic Problems.—The American Society for Research in Psychosomatic Problems will hold its annual meeting at the Hotel Pennsylvania, New York, May 11-12. The morning of the first day will be devoted to "Contributions of Military Medicine to Psychosomatic Medicine" and the afternoon session to "Psychosomatic Aspects of Orthopedic Practice." The annual dinner will be addressed in the evening by Dr. Bertram D. Lewin, New York, on "New Advances in Psychosomatic Investigative Technics." The headquarters of the American Society for Research in Psychosomatic Problems is located at 714 Madison Avenue, New York 21.

Symposium on Premedical Advisory Problems.—Alpha Epsilon Delta, national honorary premedical fraternity, in conjunction with the section on medical sciences, is arranging a special program on premedical advisory problems for the meeting in St. Louis of the American Association for the Advancement of Science. The meeting will be held at the Coronado Hotel, March 29. Dr. Carlyle F. Jacobsen, assistant dean, Washington University School of Medicine, St. Louis, will present a thorough discussion of the use and measurement value of the various objective methods of investigating the educational backgrounds of the student, and Dr. George T. Harding, Ohio State University College of Medicine, Columbus, will discuss the personality traits to be found and recognized in recommending students for the study of medicine. The second half of the program will deal with the length and content of the premedical curriculum. Dean Stanley Dorst, University of Cincinnati School of Medicine, will present the point of view of the medical school and Dr. William C. Cole, Rutgers University, New Brunswick, N. J., that of the liberal arts college.

Red Cross Field Directors in Veterans' Hospitals.—Red Cross field directors are now stationed at thirty-five Veterans Administration hospitals and others will be appointed to additional hospitals in the near future, it was announced January 28. Forming part of the recently established Red Cross Service in veterans' hospitals, these field directors work closely with Red Cross Gray Ladies, arts and skills instructors, motor and canteen corps workers, nurse's aides, dietitian's aides and others

serving such institutions, to develop well rounded programs for disabled veterans. In addition they assist with distribution of athletic and other special equipment and supplies provided by the Red Cross production corps, camp and hospital councils and Junior Red Cross to cheer and comfort patients. Veterans Administration hospitals throughout the nation are being staffed by the Red Cross with permanent field directors as fast as they can be trained and assigned. The Veterans Administration has ninety-seven hospitals and homes in operation, and this number will grow as the construction program develops in the next few years.

Special Society Elections.—At the annual meeting of the American Otological Society, Inc., in 1944 Dr. Gordon Berry, Worcester, Mass., was elected president and Dr. William E. Grove, Milwaukee, vice president. The 1945 session of the society was canceled and the officers were held over. However, when Dr. Isidore Friesner, New York, secretary-treasurer of the society, died in September 1945, the council appointed Dr. Gordon D. Hoople, Syracuse, N. Y., secretary-treasurer pro tem to fill the unexpired term. The 1946 meeting of the society will be held at the Drake Hotel, Chicago, May 31-June 1.——Dr. Daniel C. Elkin, Atlanta, Ga., was named president of the Southern Surgical Association at its meeting in December at Hot Springs, Va. Dr. Alfred Blalock, Baltimore, was in 1943 elected to a term of five years as secretary. The next annual session will be held at the Homestead, Hot Springs, Va.——The American Congress of Physical Medicine is continuing its officers until the next annual meeting at the Hotel Pennsylvania, New York, September 4-7. Dr. Walter S. McClellan, Saratoga Springs, N. Y., is president-elect and Dr. Miland E. Knapp, Minneapolis, president. Marion G. Smith, B.Sc., 30 North Michigan Avenue, Chicago 2, is executive secretary.

Preceptorships in Pediatrics and Ophthalmology.—The American Board of Pediatrics announces that preceptorships will not be acceptable as preliminary pediatric training but may be used as refresher work and accredited time in practice by those who have completed their preliminary training. The board wishes to correct any other impression that has been made concerning preceptorships. The American Board of Ophthalmology announces that, with regard to the substitution of a preceptorship for residency in an ophthalmic hospital, it has always accepted such training in favorable cases. During the present overcrowding of facilities the board expects to take a liberal attitude regarding the requirements for training. It should, however, be pointed out that neither a residency nor a preceptorship suffices in itself to meet the requirements of the board. Each case will still be judged on its merits in determining fitness for examination. In entering on preceptorship certain conditions should be kept in mind. First the student will profit most after a sound course in the basic sciences of physiology of the eye and of vision, optics, pathology, bacteriology, chemistry, pharmacology, the relation of the eye to general disease, anatomy, embryology and neurology. This is essential for a residency, more so for a preceptorship. While men have been accepted from preceptors not specialists accredited by the board, it is obvious that the board has more information about those teachers who have passed its examinations.

Medical Science and Industry.—Section N of the American Association for the Advancement of Science will devote its meeting in St. Louis, March 27-30, to a symposium on medical science and industry. It is organized in cooperation with the Council on Industrial Health of the American Medical Association. A tentative program lists the following speakers:

Joyce C. Stearns, Ph.D., St. Louis, Atomic Disintegration.
Dr. Andrew H. Dowdy, Rochester, Controlled Nuclear Energy, Its Attendant Hazards and Benefits.
J. M. Dallavalle, New York, Health Protection in the Production and Use of Atomic Energy.
Dr. Burrill B. Crohn, New York, Trauma in Relation to the Gastrointestinal Tract.
Dr. George G. Ornstein, Staten Island, N. Y., Trauma in Relation to Lungs and Pleura.
Dr. Alfred P. Solomon, Chicago, Traumatic Neuroses in Industry.
Dr. Paul D. White, Boston, Trauma and Heart Strain.
Major Gabriel Seelig, St. Louis, Compensation in Single Trauma Carcinoma.
Dr. Robert Elman, St. Louis, Recovery and Convalescence as Related to Traumatic Injury.
Dr. Thomas H. D. Storms, Toronto, Canada, Functional Rehabilitation.
Orlo L. Crissey, Flint, Mich., Selective Job Placement.
Dr. Hyman Meltzer, St. Louis, Personality Problems as They Occur in Management Group.
Dr. Hugh Ross, Montreal, Quebec, Canada, The Psychiatric Component in Personnel Problems.
Dr. Raymond Hussey, Detroit, Scope of Occupational Health and Medicine.
Dr. Carl M. Peterson, Chicago, Program of the Council on Industrial Health of the American Medical Association.
Dr. Paul A. Neal, Bethesda, Md., The Toxicity of DDT to Man.
Dr. Warfield T. Longcope, Baltimore, The Importance of Researches on War Gases to Clinical Medicine.

Rockefeller Grant to National Health Council.—A special grant of $78,500 has been made to the National Health Council by the Rockefeller Foundation to support a program of coordination of the voluntary health agencies of the country, it was announced February 4. This grant, covering operations of the council for 1946, will be used to strengthen and unify the work of the nation's 20,000 privately supported health societies whose activities have been the subject of a study by the council over the past four years. Under a new director, who will head the organization, and with its own qualified field services, the council will be able to assume the leadership for which the national situation as well as the local agencies have been calling, it was stated. The Rockefeller Foundation's aid in 1921 made possible the establishment of the National Health Council and financed the Gunn-Platt study begun some four years ago to estimate the value of the existing voluntary agencies (THE JOURNAL, Dec. 8, 1945, p. 1037). The organization of a Citizen Planning Committee marked the first step to obtain lay sponsorship for the program (THE JOURNAL, February 2, p. 298). Under the Rockefeller Foundation grant the National Health Council plans for the coming year will include facilities for joint planning, joint activities and joint services for the national agencies, the organization of new and the strengthening of established health councils in cities throughout the country, and an active field service to give practical counsel to local agencies on their organization problems. In order to demonstrate the soundness of its program, the council hopes to finance demonstrations in the coordination of health agencies in a number of cities and in one state. It will cooperate closely with the Community Chests and councils and will study the possibilities of one unified fund raising campaign, based on the National War Fund technics for such of the national health agencies as wish to join in a united effort.

FOREIGN

New Indian Department of Health.—The government of India established on September 1 a department of agriculture, a department of health and a department of education in place of the existing single department of education, health and lands, it is reported. Sir Sardar Jogendra Singh, minister in charge of the conjoint department in the viceroy's executive council, will for the time being take charge of all three departments.

Proposed National Health Service.—During December a set of principles was drawn up and agreed on for a proposed national health service by the negotiating committee representing the British Medical Association, the Royal College of Physicians of London, the Royal College of Surgeons of England, the Royal College of Obstetricians and Gynaecologists, the Royal Scottish Medical Corporation, the Society of Medical Officers of Health and the Medical Women's Federation. The *British Medical Journal* states that all government proposals for a national health service should be looked on in terms of these principles, and when the principles are infringed in any one particular the medical profession should be able to unite itself in opposition. As long as none of these principles are infringed the profession should find no difficulty in cooperating with the government in working out the administration of a national health service. The principles are:

The medical profession is, in the public interest, opposed to any form of service which leads directly or indirectly to the profession as a whole becoming full time salaried servants of the state or local authorities.
The medical profession should remain free to exercise the art and science of medicine according to its traditions, standards and knowledge, the individual doctor retaining full responsibility for the care of the patient and freedom of judgment, action, speech and publication without interference in his professional work.
The citizen should be free to chose or change his or her family doctor, to choose, in consultation with his family doctor, the hospital at which he should be treated, and free to decide whether he avails himself of the public service or obtains independently the medical service he needs.
Doctors should, like other workers, be free to choose the form, place and type of work they prefer without governmental or other direction.
Every registered medical practitioner should be entitled as a right to participate in the public service.
The hospital service should be planned over natural hospital areas centered on universities in order that these centers of education and research may influence the whole service.
There should be adequate representation of the medical profession on all administrative bodies associated with the new service in order that doctors may make their contribution to the efficiency of the service.

CORRECTION

Bacillary Dysentery.—The title of Major L. A. Smith's paper published in THE JOURNAL, January 5, should have been "Bacillary Dysentery" rather than "Shiga Dysentery."

Deaths

Mazyck Porcher Ravenel ⊕ Columbia, Mo.; Medical College of the State of South Carolina, Charleston, 1884; born in Pendleton, S. C., June 16, 1861; professor of medical bacteriology and preventive medicine from 1914 to 1936 and since 1936 emeritus professor at the University of Missouri School of Medicine, where he had been director of the public health laboratory; bacteriologist, state live stock sanitary board from 1896 to 1904; chief of the laboratory of the Henry Phipps Institute in Philadelphia from 1904 to 1907 and formerly assistant medical director; professor of bacteriology at the University of Wisconsin in Madison from 1907 to 1914 and director of the state hygienic laboratory of Wisconsin from 1908 to 1914; first lieutenant in the medical reserve corps of the U. S. Army from 1910 to 1917, major in 1917 and lieutenant colonel in the medical corps of the U. S. Army from 1917 to 1919; in 1913 delegate from the Section on Preventive Medicine and Public Health, American Medical Association and chairman 1913-1914; member of the National Advisory Health Council, Public Health Service, American Philosophical Society, National Society for the Study and Prevention of Tuberculosis, serving as president, 1911-1912, American Public Health Association, president, 1920-1921, National Committee for Mental Hygiene, Wisconsin Anti-Tuberculosis Association and past president, American School Hygiene Association, and member of its council, International Association Against Tuberculosis, National Commission on Milk Standards, International Commission on Control of Bovine Tuberculosis and the U. S. Live Stock Sanitary Association, serving as president, 1911-1912; in 1922 appointed chief associate examiner in public health for the National Board of Medical Examiners and member of the council for the district of St. Louis; in 1933 made an honorary member of the Royal Sanitary Institute of Great Britain; in 1934 appointed a member of a committee to confer with federal authorities concerning a nation wide study of nutritional values of foods; in 1930 appointed consultant in public health and medical education to the Missouri State Board of Health; his former students presented to the University of Missouri School of Medicine an oil portrait of him; for sixteen years editor and editor in chief of the *American Journal of Public Health* of which he had been made editor emeritus in 1941; died January 14, aged 84, of pneumonia.

Andrew Francis McBride Sr., ⊕ Paterson, N. J.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1889; born on Jan. 4, 1869; served as mayor of Paterson and as state commissioner of labor; past president of the Passaic County Medical Society; a trustee of the Medical Society of New Jersey and in 1929 its president; member of the House of Delegates of the American Medical Association from 1938 through 1944; fellow of the American College of Surgeons; resigned in October 1945 after fifty-five years of service on the staff of St. Joseph's Hospital, where he interned; served during World War I; chairman of the board of directors of the Paterson Savings Institution, where in 1943 the "McBride Room" was dedicated to him and an oil portrait was unveiled; a member of the board of directors of the Citizens Trust Company; life member of the chamber of commerce; in 1939 created a Knight of the Order of St. Gregory the Great, Civil Class, by Pope Pius XII; died January 3, aged 76.

Henry Turner Brooks, New York; Albany Medical College, 1887; born in Baltimore in 1861; formerly instructor, adjunct professor and professor of pathology at the New York Post-Graduate Medical School; consulting pathologist to the New Rochelle (N. Y.) Hospital, Liberty (N. Y.) Sanitarium, St. Mark's Hospital and Beth Irsael Hospital; honored in 1945 by the Albany Medical College Alumni Association with a citation for fifty years of meritorious service to humanity; civil referee for the eastern division of the medical branch of the army during World War I; author of "Manual of Clinical Microscopy and Chemistry," translated from the German, in 1904, "Use of Microscope," "General and Special Pathology" and "Trichinosis"; editor of the *New York Post-Graduate Medical Journal* from 1902 to 1912; died in the New Rochelle (N. Y.) Hospital January 1, aged 84, of bronchopneumonia, cerebral hemorrhage and cerebral arteriosclerosis.

David Clark Hilton ⊕ Lincoln, Neb.; Rush Medical College, Chicago, 1903; born near Dorchester, Neb., April 23, 1877; formerly professor of surgical anatomy at the Nebraska College of Medicine and Surgery and professor of biology at the Cotner University; fellow of the American College of Surgeons; member of the American Association for the Advancement of Science and the Nebraska Ornithological Union, of which he was a past president; one of the organizers of the 110th Medical Regiment of the Nebraska National Guard in 1923, at which time he was commissioned a lieutenant colonel; later promoted to a full colonelcy and placed in command of the regiment; in 1940 placed on the inactive list with the rank of brigadier general; surgeon, Bryan Memorial Hospital; consulting surgeon, Veterans Administration Facility; died December 12, aged 68, of coronary sclerosis.

John Smith Wilson, Poughkeepsie, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; member of the American Medical Association; past president of the Dutchess County Medical Society; served during the Spanish-American War and World War I; chairman of the local draft board during World War II; served as health officer of Poughkeepsie and as alderman from the Sixth Ward; for fourteen years school commissioner and in 1919 president of the board of education; served on the staffs of the Wassaic State School, Wassaic, Matteawan State Hospital, Beacon, Harlem Valley State Hospital in Wingdale, Hudson River State Hospital, St. Francis Hospital and the Vassar Brothers Hospital, where he died January 1, aged 80, of cerebral hemorrhage.

Philip Hale Pierson ⊕ San Francisco; Harvard Medical School, Boston, 1913; born in China in 1886; clinical professor of medicine (tuberculosis) at the Stanford University School of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; vice president of the National Tuberculosis Association, which he served as a member of the board of directors; consultant in diseases of the chest, Community Hospital of San Mateo County, San Mateo, Hassler Health Home in Redwood City and the Veterans Administration Facility; chief of the department of tuberculosis, San Francisco Hospital and the Stanford University Hospital, where he died January 17, aged 59, of cerebral thrombosis.

Archibald Delap Smith ⊕ Garden City, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1902; member of the American Academy of Pediatrics; fellow of the American College of Physicians; past president of the Brooklyn Academy of Pediatrics and the Brooklyn Pediatric Society; member of the draft and appeal boards during World War I; head of a civilian defense medical unit in Garden City during World War II; consulting pediatrician, Rockaway Beach (N. Y.) Hospital and Dispensary and the Brooklyn Hospital, where he died November 22, aged 69, of coronary thrombosis.

Maximilian Stern ⊕ Daytona Beach, Fla.; Columbia University College of Physicians and Surgeons, New York, 1900; past president of the Volusia County Medical Society; fellow of the American College of Surgeons; attending urologic surgeon, Halifax District Hospital; consulting urologist, Deland Memorial Hospital, Deland, Harry Anna-Crippled Children's Home, Umatilla, the Hospital for Joint Diseases and the Harbor Hospital in New York; inventor of the "resectoscope," an instrument for the transurethral prostatic resection; died January 19, aged 68.

Waite Adair ⊕ Lorain, Ohio; Starling-Ohio Medical College, Columbus, 1911; served during World War I; died November 3, aged 60.

Fred Ernest Angle ⊕ Kansas City, Kan.; University of Kansas School of Medicine, Kansas City, 1926; at one time an officer in the U. S. Navy; fellow of the American College of Physicians; associate in medicine at his alma mater; attending physician, Providence, Bethany and St. Margaret's hospitals; died in the University of Kansas Hospital October 30, aged 45.

Robert Hodges Ariail ⊕ Laurens, S. C.; Medical College of the State of South Carolina, Charleston, 1929; interned at the Greenville City Hospital in Greenville; died November 12, aged 40, of angina pectoris.

Frederick E. Bauer ⊕ New York; University of the City of New York Medical Department, New York, 1888; one of the founders and director of the physical therapy department, Lutheran Hospital; at one time head of the physical therapy department at Fordham Hospital; died October 30, aged 80.

Ethel Remington Beede ⊕ Faribault, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1909; for many years on the staff of the Minnesota School for Feebleminded; died in Cheyenne, Wyo., October 13, aged 63, of coronary occlusion.

Robert B. Bennett, St. Charles, Mich.; Saginaw Valley Medical College, Saginaw, 1897; died in the Saginaw General Hospital, Saginaw, November 7, aged 73.

William Birnbaum ✠ Tulsa, Okla.; University of Minnesota Medical School, Minneapolis, 1940; died in the Springfield Baptist Hospital, Springfield, Mo., November 9, aged 39, of injuries received in an automobile accident.

Sam Shirley Blackman Jr., Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1926; associate professor of pathology at his alma mater; member of the American Association of Pathologists and Bacteriologists; associate pathologist at the Johns Hopkins Hospital; accidentally drowned November 6 in Chesapeake Bay, aged 44.

Edwin A. Bowerman ✠ Buffalo; College of Physicians and Surgeons, Baltimore, 1895; an Affiliate Fellow of the American Medical Association; past president and secretary of the Buffalo Academy of Medicine; physician for the city police department for many years; died in Lancaster, Pa., October 22, aged 74, of cerebral hemorrhage.

Horace Russell Boyer ✠ Glendale, Calif.; University of Maryland School of Medicine, Baltimore, 1903; on the staff of the Physicians and Surgeons Hospital; died November 9, aged 68, of coronary thrombosis.

Clarence Walden Brown ✠ Rolling Prairie, Ind.; Indiana University School of Medicine, Indianapolis, 1931; interned at St. Catherine's Hospital in East Chicago; died November 1, aged 48, of acute auricular fibrillation and coronary occlusion.

Gilbert Thompson Brown ✠ Dayton, Ohio, Starling Medical College, Columbus, 1895; fellow of the American College of Physicians; on the staffs of the Miami Valley and St. Elizabeth's hospitals; medical director of the Gem City Life Insurance Company; died November 17, aged 76, of coronary thrombosis.

Harry Seth Bull ✠ Auburn, N. Y.; Syracuse University College of Medicine, 1908; past president of the Cayuga County Medical Society; member of the Radiological Society of North America, Inc.; served during World War I; served on the staffs of the Mercy Hospital and the Auburn City Hospital, where he died January 4, aged 61, of carcinoma of the throat.

Archibald McDowell Burfoot, Fentress, Va.; Baltimore Medical College, 1906; member of the American Medical Association; past president of the Seaboard Medical Association; died November 25, aged 61, of angina pectoris and hypertension.

William Henry Burroughs ✠ St. Louis; St. Louis University School of Medicine, 1923; died in St. John's Hospital October 19, aged 55.

John LeRoy Burton, Buhl, Minn.; University of Minnesota Medical School, Minneapolis, 1936; village health officer of Buhl and Kinney; treasurer of the school board; on the staff of the Virginia Municipal Hospital in Virginia and the Range Hospital; died October 31, aged 41, of injuries received in an automobile accident.

William Edward Code, Chicago; Illinois Medical College, Chicago, 1904; member of the American Medical Association; died October 29, aged 67.

Alfred Peters Cole, Ironton, Ohio; College of Physicians and Surgeons, New York, 1891; served during World War I; formerly medical director of the Hamilton County Home and Chronic Disease Hospital in Cincinnati; died October 29, aged 78, of coronary thrombosis.

William James Coleman, Newport, Ky.; Jefferson Medical College of Philadelphia, 1909; died in the Baptist Hospital, Memphis, Tenn., November 13, aged 61.

Lubie G. Colley, Farmington, Ky.; University of Louisville Medical Department, 1897; member of the American Medical Association; died November 1, aged 71.

Olive Jerome Crawford, Los Angeles; College of Physicians and Surgeons, Los Angeles, 1913; died November 2, aged 66.

Ralph P. Cummings, Conway, Ark.; Meharry Medical College, Nashville, Tenn., 1914; died October 14, aged 65, of chronic myocarditis.

Arthur Tappan Reed Cunningham, Honolulu, Hawaii; Western Reserve University Medical Department, Cleveland, 1900; member of the American Medical Association, North Pacific Surgical Association and the Washington State Medical Association; fellow of the American College of Surgeons; served on the staff of St. Luke's Hospital in Spokane, Wash.; died October 21, aged 72, of lymphatic leukemia.

Percy William Mark Curry, Cleveland; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1916; served with the Royal Army Medical Corps during World War I; on the staff of the Hawthornden State Hospital, Macedonia, Ohio; died in South Euclid November 20, aged 55, of carcinoma.

Byron Daniel ✠ Sardis, Ga.; University of Georgia Medical Department, Augusta, 1900; died in Augusta in November, aged 70.

John Calhoun Davidson, Bryan, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1886; died November 4, aged 85.

James Joseph Derwin ✠ Winsted, Conn.; Georgetown University School of Medicine, Washington, D. C., 1930; interned at St. Francis Hospital in Hartford; died in Boston September 9, aged 41, of septicemia.

George Washington Desrosier ✠ Colusa, Calif.; Cooper Medical College, San Francisco, 1894; county physician; served as city and county health officer; on the staff of the Colusa Memorial Hospital; died October 25, aged 72, of heart disease and arteriosclerosis.

Charles G. Dick, Elwood, Ind.; Keokuk (Iowa) Medical College, 1895; died in Indianapolis November 25, aged 79, of hypostatic pneumonia.

Henry Charles Eichacker, Brooklyn; Long Island College Hospital, Brooklyn, 1914; member of the American Medical Association; past president of the Medical Society of Queens County; president of the Queensboro Surgical Society; member of the Brooklyn Gynecological Society; on the staffs of the Lutheran Hospital in Brooklyn and the Queens General Hospital in Jamaica; consultant to the Rockaway Beach (N. Y.) Hospital; died November 4, aged 54, of arteriosclerotic heart disease.

Gabriel M. Epstein ✠ Philadelphia; Temple University School of Medicine, Philadelphia, 1929; on the staffs of the Philadelphia General, St. Luke's and Children's hospitals; interned at the Mount Sinai Hospital, where he was a member of the staff and where he died November 1, aged 41, of carcinoma.

Earl Fairbanks, Luther, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1888; served as state senator and mayor; on the staff of the Mercy Hospital and Sanitarium in Manistee; died in Kalamazoo November 16, aged 85, of myocardial degeneration.

Floyd F. Farnsworth, Milton, W. Va.; Maryland Medical College, Baltimore, 1904; member of the American Medical Association; major, medical corps, U. S. Army, during World War I; affiliated with the U. S. Public Health Service from 1919 to 1923; for many years a member of the state board of medical examiners; first president and formerly director of the bureau of venereal diseases, state board of health; served as mayor of Milton; died January 2, aged 76, of heart disease.

Manning Cromwell Field, Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1916; member of the American Medical Association and the American Academy of Pediatrics; specialist certified by the American Board of Pediatrics, Inc.; served during World War I; attending pediatrician at the Brooklyn Hospital and visiting pediatrician at Cumberland Hospital; died November 29, aged 54.

Percy Coupland Fisher ✠ Ridgewood, N. J.; University of Vermont College of Medicine, Burlington, 1921; past president of the Ridgewood Medical Society; served during World War I; member of the courtesy staff of St. Joseph's and Paterson General hospitals in Paterson and the Hackensack (N. J.) Hospital; died in the Presbyterian Medical Center, New York, November 28, aged 51, of peritonitis following duodenal ulcer.

Thomas J. Gaffney, Lakeville, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1897; died in November, aged 76, of nephritis.

William Gauch, Newark, N. J.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1895; member of the American Medical Association; fellow of the American College of Surgeons; served during World War I; attending gynecologist and past president of the medical staff of the City Hospital; director of clinic, gynecologic department, Newark City Dispensary; on the staffs of St. James, Presbyterian and St. Michael's hospitals; died November 13, aged 72, of cerebral thrombosis and arteriosclerosis.

James Philip Goray ✠ Fitchburg, Mass.; Harvard Medical College, Boston, 1891; specialist certified by the American Board of Ophthalmology; for many years member of the city school committee; on the staff of the Burbank Hospital; died November 12, aged 78, of arteriosclerosis and bronchopneumonia.

Arthur Rogers Grant, Utica, N. Y.; New York University Medical College, 1897; served overseas during World War I; fellow of the American College of Surgeons; for many years on the staff of the Utica Memorial Hospital; died in Pasadena, Calif., November 6, aged 73, of coronary thrombosis and generalized arteriosclerosis.

James Lonas Hardin, Sacramento, Calif.; Cooper Medical College, San Francisco, 1893; died November 18, aged 78, of coronary occlusion.

James Harkins Sr., Mount Pleasant, Pa.; Eclectic Medical Institute, Cincinnati, 1886; also a druggist; served as an officer in the Pennsylvania National Guard; veteran of the Spanish-American War; formerly county coroner, member of the borough council and school board; died in the Henry Clay Frick Memorial Hospital October 30, aged 82, of injuries received when he was struck by an automobile.

Charlton Sidney Harris ⊕ Indian Rocks, Fla.; Birmingham Medical College, 1914; served overseas during World War I; formerly physician for the Republic Steel Corporation in Sayreton, Ala.; died in the Veterans Administration Facility, Bay Pines, November 13, aged 60, of acute anemia and gastric hemorrhage due to ulcer.

William Mathias Hoel, Los Angeles; University Medical College of Kansas City, Mo., 1906; served in France during World War I; died October 28, aged 63, of coronary thrombosis.

John Henry Hohnstedt ⊕ Fort Thomas, Ky.; University of Louisville Medical Department, 1908; served during World War I; on the staffs of the St. Elizabeth and Booth Memorial hospitals in Covington and Speer's Memorial Hospital, Dayton, where he died October 28, aged 72, of coronary occlusion.

Evan Marshall Hutchins, North Wilkesboro, N. C.; North Carolina Medical College, Davidson, 1896; member of the American Medical Association; died October 30, aged 75.

Walter Kleberg ⊕ Galveston, Texas; University of Texas School of Medicine, Galveston, 1906; served as health officer of Galveston, died in November, aged 64.

Leon M. Kysor ⊕ Hornell, N. Y.; University of Buffalo School of Medicine, 1903; served as president of the Lake Keuka Medical and Surgical Association; veteran of the Spanish-American War and World War I; on the staffs of the Bethesda Hospital and St. James Mercy Hospital, where he died October 17, aged 73, of congestive heart failure and uremia.

Kathryn Rose Lavin, Flint, Mich.; Loyola University School of Medicine, Chicago, 1932; member of the American Medical Association; on the staffs of the Women's Hospital, Hurley Hospital and St. Joseph's Hospital, where she died October 21, aged 47, of carcinoma of the ovaries.

Frank Robert Lee ⊕ North Andover, Mass.; Tufts College Medical School, Boston, 1927; interned at the Lawrence General Hospital in Lawrence; died October 15, aged 41, of coronary thrombosis.

Marion Bates Leverett ⊕ McGehee, Ark.; University of Arkansas School of Medicine, Little Rock, 1934; interned at the Little Rock City Hospital, Little Rock, where he served a residency; on the staff of the Dermott Hospital in Dermott; died October 19, aged 36, of injuries received in an automobile accident.

Gomer S. Llewelyn ⊕ Mayview, Pa.; Chicago College of Medicine and Surgery, 1912; superintendent of the Mayview State Hospital; died in St. Margaret Memorial Hospital, Pittsburgh, November 21, aged 59, of cancer of the left kidney.

Thomas Ignatius Lynch ⊕ Louisville, Ky.; University of Louisville School of Medicine, 1925; died in the SS Mary and Elizabeth Hospital November 9, aged 45, of hypertensive heart disease.

John Malcolm MacLeod ⊕ Quincy, Mass.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1906; served as school physician and as city physician; for many years on the staff of the Quincy City Hospital; died October 19, aged 72, of coronary occlusion.

James Durant Macon, Meridian, Miss.; Meharry Medical College, Nashville, Tenn., 1912; died September 26, aged 62, of lobar pneumonia.

Frank T. Marr ⊕ Chillicothe, Ohio; College of Physicians and Surgeons, Baltimore, 1901; died October 28, aged 68, of cerebral hemorrhage.

Charles Summers Marsden ⊕ San Diego; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; died October 13, aged 72, of carcinoma of the cecum.

Emit Luther McCafferty, Mount Vernon, Ala.; Atlanta College of Physicians and Surgeons, 1902; member of the American Medical Association and the American Psychiatric Association; in 1939 a citation was voted to him by the Medical Association of the State of Alabama for early attempts at production and transmission of pellagra in 1907-1908; affiliated with the Searcy Hospital; died in an infirmary in Mobile, January 14, aged 68.

William James McCausland ⊕ Quincy, Mass.; Harvard Medical School, Boston, 1900; fellow of the American College of Surgeons; physician to the city board of health; member of the consulting staff of the Quincy City Hospital, where he died November 5, aged 70, of cerebral hemorrhage.

William Kenneth McCoy, Gum Spring, Va.; Medical College of Virginia, Richmond, 1900; died October 30, aged 72, of encephalitis.

Rogers William McKean ⊕ Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, 1917; died in the Gladewater Hospital, Gladewater, October 7, aged 57, of cirrhosis of the liver.

Frank E. McKim ⊕ Marietta, Ohio; Medical College of Ohio, Cincinnati, 1884; life member of the Ohio State Medical Association; died October 20, aged 84.

Hugh Clark McRee, Hartselle, Ala.; University of Nashville (Tenn.) Medical Department, 1898; member of the American Medical Association; formerly engaged in special work under the supervision of the bureau of preventable diseases of the state department of health; served as health officer of Lee and Marion counties; died in St. Vincent's Hospital, Birmingham, October 7, aged 69, of ruptured aneurysm of the abdominal aorta and generalized arteriosclerosis.

Jouett Menefee, Bonita Springs, Fla.; University of Louisville (Ky.) Medical Department, 1906; died October 26, aged 65, of mesenteric thrombosis.

Nelson B. Michael, Belington, W. Va.; Maryland Medical College, Baltimore, 1904; on the staff of the Tucker County Hospital, Parsons, where he died October 28, aged 70, of hypertensive heart disease with nephritis.

Caroline I. Peterson Mitchell, Orange, Texas; (licensed in Texas under the Act of 1907); died October 3, aged 72.

George Andrew Moore ⊕ Palmer, Mass.; College of Physicians and Surgeons, Boston, 1910; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; on the staffs of the Monson State and Wing Memorial hospitals; died October 6, aged 74, of arteriosclerotic heart disease.

Edgar L. Morrill ⊕ Fort Collins, Colo.; John A. Creighton Medical College, Omaha, 1902; charter member and past president of the Larimer County Medical Society; served during World War I; eye, ear, nose and throat consultant for the county draft board during World War II; consultant in eye, ear, nose and throat to the Larimer County Hospital; died January 19, aged 69, of coronary thrombosis.

Andrew Nelson, Iron Mountain, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; died in the Veterans Administration Facility, Bay Pines, Fla., October 25, aged 75, of hypertensive heart disease.

Evertt Allen Oliver ⊕ Richland, Mo.; Marion-Sims-Beaumont Medical College, St. Louis, 1902; also a graduate in pharmacy; on the staff of the Waynesville (Mo.) Hospital; died October 6, aged 72.

Richard Willis Oliver, Louisville, Ky.; Louisville National Medical College, Medical Department State University, 1903; member of the staff of the Red Cross Hospital; died in Danville, Va., September 15, aged 70.

Sidney Nuttall Parkinson ⊕ Piedmont, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1926; interned at the Knickerbocker Hospital and the Manhattan Eye, Ear and Throat Hospital, both in New York; member of the Pacific Coast Oto-Ophthalmological Society; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve on July 18, 1942 and service terminated in June 1943; specialist certified by the American Board of Otolaryngology; died October 31, aged 46, of carcinoma of the lung.

Carl Richard Peterson ⊕ Chicago; Jenner Medical College, Chicago, 1906; Bennett Medical College, Chicago, 1913; died in Thomasville, N. C., November 7, aged 70, of cardiovascular disease.

Francis Xavier Pidgeon, New York; Albany (N. Y.) Medical College, 1896; served during World War I; for many years had been on the medical staff of the New York Central Railroad; died in the New York Post-Graduate Hospital October 31, aged 72.

Frances Elizabeth Potter, Upper Darby, Pa.; Temple University School of Medicine, Philadelphia, 1932; member of the American Medical Association; served on the staff of the Norristown State Hospital in Norristown; died November 3, aged 50.

Arthur Patterson Reed ✠ Rochester, N. Y.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; member of the Rochester Academy of Medicine and the Rochester Pathological Society; served in Base Hospital number 19 during World War I and in 1919 was discharged as a major; since 1920 in charge of medical work of the Veterans Administration; died January 22, aged 73, of coronary occlusion.

Fred Repetti ✠ Washington, D. C.; George Washington University School of Medicine, Washington, D. C., 1906; died in the Doctors Hospital November 24, aged 70, of coronary heart disease.

James Anthony Robertson ✠ Springfield, Mo.; Missouri Medical College, St. Louis, 1898; died October 20, aged 69, of generalized arteriosclerosis.

Burget Runnels, Milledgeville, Ill.; the Hahnemann Medical College and Hospital, Chicago, 1905; served during World War I; examiner for the Northwestern Life Insurance Company for many years; died in Sterling November 1, aged 68, of coronary occlusion.

Bruno Lyonel Schuster ✠ Los Angeles; Jefferson Medical College of Philadelphia, 1898; died November 25, aged 72, of congestive heart failure.

Wilbur Allen Sellers ✠ Montgomery, Ala.; Medical College of Alabama, Mobile, 1904; died October 30, aged 63, of burns received when he fell over a gas heater and his clothing ignited.

Joseph Shnearer, Los Angeles; Medizinische Fakultät der Universitat Wien, Vienna, Austria, 1913; member of the American Medical Association; died September 25, aged 56.

Harry Silbert, Salem, Mass.; Tufts College Medical School, Boston, 1921; member of the American Medical Association; interned at the Maine General Hospital in Portland and the Lying-in Hospital in New York; for several years city physician; on the staff of the Lynn (Mass.) Hospital; died in the Salem Hospital October 31, aged 50, of cerebral hemorrhage and malignant hypertension.

Arthur Waller Slee, Brooklyn; Long Island College Hospital, Brooklyn, 1899; regimental surgeon with the fifty third Pioneer Infantry, 5th Army Corps, serving overseas during World War I; colonel, medical reserve corps, U. S. Army, not on active dutv; served on the staff of the Lutheran Hospital; died in the Veterans Administration Facility, New York, November 8, aged 71, of cerebral arteriosclerosis and essential hypertension with cardiac enlargement.

Oden R. Sudler, St. Petersburg, Fla.; Georgetown University School of Medicine, Washington, D. C.; 1903; also a graduate in pharmacy; at one time affiliated with the Food and Drug Administration, Washington, D. C.; died November 14, aged 70.

Oscar Parmenio Thompson, Waterloo, Iowa; State University of Iowa College of Medicine, Iowa City, 1876; died October 29, aged 91, of cerebral hemorrhage.

Lieut. Arthur Louis Benison, M. C., A. U. S., 1912-1944

Capt. Maurice Joses (MC), U.S.N., 1891-1944

Capt. Robert Emil Wolf, M. C., A. U. S., 1912-1944

Clarence Good Shearon ✠ Chicago; Northwestern University Medical School, Chicago, 1927; associate in surgery at his alma mater; served during World War I; medical director of Montgomery Ward and Company; senior attending surgeon, St. Luke's Hospital; died November 17, aged 46, of coronary thrombosis.

Francis F. Zeller, St Louis; Beaumont Hospital Medical College, St. Louis, 1888; on the staff of the Missouri Pacific Hospital; died October 11, aged 83, of coronary thrombosis.

Elmer Ellsworth Zolman, Long Beach, Calif.; Eclectic Medical Institute, Cincinnati, 1901; died October 23, aged 73, of chronic myocarditis.

KILLED IN ACTION

Arthur Louis Benison, Flint, Mich.; University of Michigan Medical School, Ann Arbor, 1937; member of the American Medical Association; served an internship and residency at St. Mary's Hospital in Grand Rapids; formerly affiliated with the Edmore (Mich.) Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, on May 15, 1941; a surgeon with the Second Battalion, 88th Field Artillery (PS) in Bataan; a member of the first medical field unit on Bataan to be captured in the fall of the Philippines; a prisoner of war in Philippine Military Prison Camp Number 1 for more than two years; died in the South China Sea Oct. 24, 1944, aged 32, while on board a Japanese prison ship which was sunk.

Maurice Joses ✠ Captain (MC), U. S. Navy, Los Angeles; University of California Medical School, San Francisco, 1916; served during World War I; entered the medical corps of the regular U. S. Navy on Oct. 19, 1921; killed in action aboard a Japanese prison ship off Luzon, P. I., Dec. 15, 1944, aged 53.

Robert Emil Wolf, La Crosse, Wis.; University of Arkansas School of Medicine, Little Rock, 1940; member of the American Medical Association and the Louisiana State Medical Society; interned at the Shreveport Charity Hospital in Shreveport, La.; began active duty as a first lieutenant in the medical corps, Army of the United States, on Aug. 22, 1942; promoted to captain; battalion surgeon; killed in action in Stalag, Germany, Dec. 23, 1944, aged 32.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 19, 1946.

A New Treatment of Lupus Vulgaris

At the section of dermatology of the Royal Society of Medicine Drs. G. B. Dowling and W. P. Thomas reported remarkable results from the treatment of lupus vulgaris with large doses of calciferol. They had treated 38 cases, of which 16 have been followed for more than a year. In all improvement was observed and in 12 the lesions seem to have disappeared entirely. In 1 there has been no return of the disease in the eighteen months since the treatment was stopped. A few have shown little benefit, but the majority have been strikingly improved after making poor progress under other treatment. The dermatologists who saw some of the cases were much impressed. This new treatment is far simpler and much less expensive in time and effort than current methods, such as frequent exposures to Finsen light or ultraviolet rays. But the treatment has the disadvantage of requiring doses which border on the toxic. At least 8 patients have shown signs of intolerance, such as nausea, loss of appetite and depression. Most of these received 150,000 international units of calciferol daily. In all of these the toxic symptoms disappeared when the dosage was reduced to 100,000. Unlike the natural vitamin D obtained from fish liver oils, calciferol is prepared artificially by irradiation of a vegetable sterol, ergosterol, and the preparations may include toxic by-products of irradiation. Very large doses are known to cause deposition of calcium in soft tissues, notably the renal tubules and arterioles and the media of large blood vessels. Though this calcification tends to disappear on discontinuance of the calciferol, it should not be used on the scale employed by Dowling and Thomas without careful consideration of the case and watching for toxic symptoms.

Discoloration of the Abdominal Wall in Acute Pancreatitis

Discoloration of the abdominal wall in acute pancreatitis was first observed by Grey Turner in 1912 and reported in 1920 in the *British Journal of Surgery*. In America umbilical discoloration in ruptured ectopic pregnancy was described by Cullen in 1918. In English literature these two signs are respectively termed Turner's and Cullen's signs but in America Cullen's sign is applied to both. In the *British Journal of Surgery* (**33**:182 [Oct.] 1945) H. T. Cox describes an instance. A woman aged 65 was admitted to a hospital because of continuous and intense upper abdominal pain of sixteen hours' duration. The pulse rate was 104, the temperature 97 F. There was a history of gastrojejunostomy for duodenal ulcer and appendectomy sixteen years before. On the third day a discolored area appeared around the umbilicus; on the seventh day a similar but smaller area was noticed in the left loin. The areas displayed a mixture of blue, green and yellow elements, as in a fading ecchymosis. Acute pancreatitis was diagnosed. Under conservative treatment the symptoms diminished, with formation of a mass in the left hypochondrium. This was drained through a small incision. The oblique and transverse muscles were found permeated with dark red blood. When they were incised a cavity containing 3 ounces of blood clot, showing increased lipase activity, was entered. A drainage tube was inserted. Convalescence was uneventful.

The importance of Grey Turner's sign lies in its diagnostic value. It is agreed that the flank discoloration is due to extraperitoneal spread of blood and pancreatic secretion. But the umbilical discoloration has offered scope for much ingenuity. Grey Turner referred to the possibility of pancreatic secretion reaching the umbilicus by the round ligament. Fallis in 1937 suggested abnormal apertures in the peritoneum, the rich anastomosis between the lymphatics of the subcutaneous tissue and those of the peritoneum, and finally an extraperitoneal mode of spread.

High Infant Mortality in Germany

For the first time since the war, vital statistics are available from the big cities of Germany. They show a high infant mortality as well as a great rise in the general death rate. In Hamburg the annual rates per thousand of population are births, 11.75; deaths, 17.30; infant mortality, 145.2. The extent of the increased mortality, as well as the fall in the birth rate, is shown by comparison with the prewar figures of 1938: birth rate, 16.54; death rate, 12.14; infant mortality, 50.30. In Berlin the increase in mortality was even greater. For the period Sept. 12 to Oct. 12, 1945 the figures were birth rate, 15; death rate, 54; infant mortality, 254.

PARIS

(From Our Regular Correspondent)

Jan. 30, 1946.

An Exhibit on Penicillin

The American Information Service, the British Council for Scientific Research and the French Services of Public Health have arranged an exhibit on penicillin at the Palais de la Découverte. Diagrams and material of American, British and French origin are exhibited, among them materials of William L. White, Franklin D. Murphy, Harrison F. Flippin of the Pennsylvania University Hospital, Chester S. Keefer of the Massachusetts General Hospital, David Rosenberg and P. A. Arling. The French production of penicillin is still insufficient and its importation has increased from 1 billion units in January, February and March 1945 to 6 or 7 billion units in August and September. Thirteen billion units is to be imported during the coming months. The sale of penicillin is limited and treatment is performed in specified centers and at hospitals in serious cases. In Paris there are eighteen centers of treatment, five of them venereal diseases centers. In France the number of centers has increased from eighteen in the first quarter of 1945 to one hundred and twenty-one in the third. During the exhibit several lectures were given, one by Sir Howard Florey, winner of the Nobel Prize for 1945, and one by Dr. Nitti, chief of a department of the Pasteur Institute.

Doctors and Scientists Killed During Occupation

It is only now that the losses sustained by the French Medical Corps during the occupation are coming to be known. Over 100 doctors died victims of duty as "resistants" to occupation, 5 committed suicide in 1940 and 268 were deported, of whom few have returned. In his statement on radiobiology in France Professor Lacassagne gave the following names of scientists killed by the Germans: Holveck, known for his studies of living cells and virus; Wollmann and Mrs. Wollmann; Reiss, author of a classic treatise on biologic action of n-rays and y-rays; Yles, who investigated the vitamins; Gabriel Florence, who worked on vitamins and epinephrine.

Bismuth Therapy of Syphilis

In the *Journal de médecine de Lyon* Gate and P. Cuilleret report fourteen years' experience with bismuth compounds in the treatment of 310 patients having primary and secondary syphilis. The authors used bismuth hydroxide 7.5 per cent or quinine bismuth iodide or oil soluble bismuth compounds. Of 242 systematically controlled cases, a negative serologic reaction was obtained in 131 after the first series of bismuth, in 78 after a second series, in 24 after the third and in 9 after the fourth. Thirty-three cases followed for ten years have repeatedly given a negative serologic reaction. One case of reinfection showed that, with bismuth, a true sterilization is obtained. Complica-

tions to be noted are 2 instances of temporary albuminuria, 2 of urticaria, 2 of abscesses, 1 of dermatitis and 10 of transient stomatitis. This success with bismuth is more significant as arsenic resistance increases. Up to 16 per cent of the cases treated in a Lyons dermatology clinic have been resistant to arsenic compounds.

SWEDEN

(From Our Regular Correspondent)

STOCKHOLM, Jan. 15, 1946.

Seventy-Six Grants for Research in Medicine

On December 7 considerable sums of money were granted by the Therese and John Andersson Foundation to seventy-six medical research workers and institutions. The largest amount, 7,000 kronor, was given to Dr. L. Engstrand of Stockholm for research into intra-abdominal blood circulation with special reference to the portal blood and oxygen supply of the liver and its relation to the function of the liver under certain surgical conditions. Large sums were granted for research in a study of blood-building factors by Dr. G. Ågren of Uppsala University, a study of hypertension by Dr. P. Edman of Stockholm, a study of the importance in coronary diagnosis of heart function tests, particularly the hypoxemia test, by Dr. G. Nylin of Stockholm, a study of the toxic and therapeutic effects of dextran, the blood plasma substitute, by Dr. G. Thorsén of Stockholm, an investigation of the production of sexual hormones by the adrenal glands by Dr. Miriam Furuhjelm of Stockholm, an investigation by Dr. J. Agner of Stockholm of the formation and significance of verdoperoxidase, a study of the respective roles of the respiratory center and the peripheral chemo receptors in acclimatizing to oxygen deficiency by Dr. H. Bjurstedt of Stockholm, a study of osseous development in infancy by Dr. B. Malmgren of Stockholm and a study by Dr. E. Wassén and Dr. G. Zander of the effect of dicumarol on experimentally produced arthritis and other inflammatory conditions.

Swedish Hospital in Poland

In the little Polish town of Otwock, a few miles southwest of Warsaw, Swedish money and effort are combining to build a hospital to help relieve the suffering of Poland. The hospital consists of thirty-two buildings, it has beds for 300 patients, and it will cost about 3 million kronor. It is to be primarily a tuberculosis hospital but will also have a general medical division. Every bit of material for the actual building as well as the equipment and medicines have been sent from Sweden. Swedish engineers are directing the construction of the buildings and Swedish doctors the medical aspects of the project. In January a completely equipped tuberculosis dispensary, including the latest types of x-ray apparatus, left Stockholm headed by Dr. H. Neumüller, a specialist in this field. With him were a pediatrician, a nurse and an x-ray technician. A Polish tuberculosis specialist, Polish nurses and office help will assist Dr. Neumüller. The Swedes plan to run the hospital for a year and then turn it over to the Poles for future work.

Heavy Carbon Produced in Sweden

When news of the success of American scientists in producing heavy carbon reached Sweden, it was revealed that at the Wennergren Institute investigators have been working on this problem for several years and have also been successful in producing carbon 13. According to Professor John Runnström, the Swedish scientists built their apparatus according to the method developed by the American Nobel Prize winner Harold C. Urey and were able to produce small quantities of the substance. This led to investigations into albumin synthesis of micro-organisms. Unfortunately there is not as yet a mass spectrometer in Sweden, so that it has been necessary to forward preparations to the United States for analysis. However, this type of spectrometer is now being built and is expected to be ready in the near future.

Courses for "Sports Physicians"

The critical attitude of Swedish physicians has been evidenced in one of the greatest popular movements of this age, athletics. Because the physicians have refused to maintain that sports prolong life or protect from illness they have been accused of obstructing the progress of sports and of indifference to improving the health of the public. The result has been the development of quackery in connection with the physiology of athletics, training methods, diet and so on. Last year saw the development of closer cooperation between physicians and the sports movement, and far less indifference in Sweden. An important milestone was the opening of a so-called sports clinic at the Stockholm stadium in 1944, where a continuous control has been kept on athletics. Another measure of importance is the "ski doctors" course held during the winter at Storlien, the Swedish ski resort. In June 1945 the first summer course for doctors interested in athletics was held at the Athletic College at Bösön, Stockholm. The opening session was attended by fifteen pioneering physicians representing all ages and categories, from beginners to older army doctors. Those taking part in the course participated in most of the sports themselves, receiving instruction from experts in each field on training, exercising, diet and theory. Lectures were held on medical problems in athletics, especially heart ailments. There was discussion concerning problems connected with the medical care of athletes and those indulging in sports in general. The course was pronounced a success, an enterprise to be continued and broadened.

Increase of Syphilis in Sweden

In Sweden as in all other countries the incidence of venereal disease has increased in recent years. Formerly Scandinavia had an excellent record in this respect, but the war has had its effect here also. A recent report disclosed that from 1940 to 1943 the number of cases of gonorrhea in Sweden doubled, with about 20,000 new cases. In 1945, however, there were 15,590 cases, a decrease of about 4,000 from the previous year. This decrease is probably due to the new methods of treatment, including sulfonamides, fever and penicillin.

Since 1941 the number of cases of syphilis has increased fivefold, the figure in 1944 being 1,310 new cases, with even more in 1945. The Swedish health authorities are using arsphenamine and heavy metal salts in their treatment of syphilis and feel that Americans are overoptimistic on the basis of too little experience with penicillin to justify abandoning the older methods. Penicillin is used only when the orthodox treatment is not possible.

Large Donation to Institute for Cytologic Research

Professor Torbjörn Caspersson, chief of the Swedish Institute for Cytologic Research, has announced that the institute has received a gift of 336,000 kronor for a new building at the Karolinska Hospital in Stockholm. Although it has been doing remarkable work in cell research, the institute has been carrying on in rather primitive and cramped quarters; the new building will permit a larger staff and greater activity. Professor Caspersson has recently returned from a three months trip to the United States, where he had been invited by an organization for cancer research to take part in its convention and to report on his own work.

Swedish Physician to Lecture in the United States

Dr. Gunnar Bauer, who has achieved international recognition because of his heparin treatment for thrombosis, has been invited by American physicians to lecture in the United States. He plans to leave at the beginning of February and remain in the United States for about two months; then, at the invitation of the Danish Surgical Association, he will lecture on his treatment in Copenhagen.

Gonococcus Culture

According to a recent resolution of the Swedish parliament, any doctor may now requisition culture tubes from various bacteriologic laboratories and after taking a specimen submit it for analysis at the government's expense. From the northern part of the country, where there are no laboratories, the specimens are flown to Stockholm within twelve hours.

Unusual Operation by Stockholm Physician

Dr. Clarence Crafoord, chief of the Sabbatsberg Hospital in Stockholm, recently performed for the sixth time an operation for which he is receiving a good deal of recognition. He has operated on the aorta in cases of "coarctatio aortae" and has been extremely successful.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Dec. 31, 1945.

Hyperthyroidism and Goiter

Dr. Mariano de Andrade and Dr. Raymundo Britto have published a review covering a ten year period during which they treated 900 patients with thyroid disease, of whom 563, or 62.5 per cent, had manifestations of hyperthyroidism. Predominant among the thyroid diseases without toxicity were puberty goiter (87 cases, or 9.7 per cent), the adenomas (72 cases, or 8.0 per cent) and nontoxic nodular goiter (59 cases, or 6.5 per cent). A simple analysis of the cases disclosed that 96.6 per cent of the patients with hyperthyroidism presented goiter, while toxic forms without definite enlargement of the thyroid occurred in 3.4 per cent. Among the patients with toxic goiter the diffuse form was present in more than half (53.7 per cent), or 51.7 per cent of all the patients presenting hyperthyroidism. In the class of diffuse toxic goiter the authors included exophthalmic goiter (Basedow-Graves syndrome). Of 293 cases which were specially studied 170, or 58.0 per cent, showed all degrees of exophthalmos. The exophthalmos was bilateral in 162 patients (95.3 per cent), unilateral in the left eye in 6 (3.5 per cent) and in the right eye in 2 (1.2 per cent). The number of cases of hyperthyroidism was unevenly divided between the two sexes, 84.9 per cent in women, when all the forms of the disease were taken into consideration. Predominance in women was still higher (94.7 per cent) when thyrotoxicosis was considered alone. Andrade and Britto emphasized the point that the color distribution was very significant, since 81.9 per cent of the patients were white. However this does not allow for the difference in the distribution of color in the population, from which the patients may represent a peculiar sample. The largest number of patients were from 20 to 40 years of age, particularly between ages 25 and 35. Hyperthyroidism was not common before age 10 or after 60. Of the 900 patients studied 377, or 41.9 per cent, were treated surgically; 375, or 41.7 per cent, were treated medically; 6, or 0.7 per cent, were treated by x-rays, and 142, or 15.8 per cent, refused any treatment. The deaths were 13 in all, 9 of them after operations.

In another paper, A. A. Sampaio presented the results of the goiter survey which he made over a period of several years in a sample of sixteen counties of the state of São Paulo, especially in the school population. He found a total of 16,843 cases of the disease. There are extensive districts where the incidence is between 20 and 30 per cent, but particular areas in the high plateau region have an incidence of 70 and even 80 per cent. In a general manner the incidence steadily increases with age. The disease in the state of São Paulo has decreased in the last hundred years. The author believe that this is due to improvement in health conditions of the general population which accompanied the improvement in economic conditions. Sampaio points out that the extension and the intensity of the disease in many counties of the state should lead the authorities to an attempt to remedy this situation.

A. L. Pereira published the results of an experiment carried out during the last two years with the use of iodized table salt in areas of endemic goiter in the state of Minas Gerais. He says that, from a general average of 44 per cent, the incidence decreased to an average of 27 per cent.

Special Medical Courses

A series of lectures under the general title of "Recent Progress of American Medicine," sponsored by Dr. Beatrice Berle, wife of the United States ambassador to Brazil, has been organized at the center of medical studies of the Misericordia Hospital of Rio de Janeiro. These lectures are being delivered by Brazilian alumni of American universities. The course, to be completed during the month of December, includes lectures on recent advances in the serology and treatment of syphilis (Dr. A. Severo da Costa), cardiology (Dr. A. Araujo Villela), nutrition (Dr. Benjamin Albagli), gastroenterology (Dr. E. Figueiredo Mendes), orthopedic surgery (Dr. Henrique de Gois), urology (Dr. Paulo de Albuquerque), anesthesia (Dr. Oscar V. Ribeiro), pediatrics (Dr. Luis T. Barbosa), otorhinolaryngology (Dr. Waldemar Salem) and allergy (Dr. Ulysses F. Alves).

Dr. Flavio A. de Souza, associate professor of clinical psychiatry at the University of Rio de Janeiro, is now giving a special course on the principal subjects of psychosomatic medicine. Dr. Mira y Lopez of Barcelona, Spain, will deliver a lecture included in the course on the subject "Psychosomatic Medicine versus Integral Medicine."

Personal

Dr. Raul Leitão da Cunha, professor at the School of Medicine of the University of Rio de Janeiro and president of the university for several years, has been appointed minister of health, succeeding Hon. Gustavo Capanema, who held this post for more than ten years during the administration of President Getulio Vargas.

Dr. Hugo Pinheiro Guimarães has been appointed dean of the Medical School of the University of Rio de Janeiro, succeeding Dr. Froes da Fonseca.

Dr. Roberval C. de Farias has been appointed director general of the National Department of Health, succeeding Dr. J. de Barros Barreto, who had held the post since 1942.

Dr. J. Velho da Silva has been appointed secretary general of health of the Federal District (city of Rio de Janeiro), succeeding Dr. A. de Oliveira Lima, who had occupied this post since March of last year. The secretary of health has under him the Department of Hospitals and the Department of Public Health.

Marriages

JOHN LIPPINCOTT GUERRANT, Callaway, Va., to Miss Laura Elizabeth Bailey of McConnellville, S. C., in Charlottesville, November 30.

THOMAS JOSEPH MURPHY, Columbus, Ohio, to Miss Elaine McKinney of Waverly, Ala., at Rossville, Ga., October 13.

MARION CALVIN MARTIN, Miami, Fla., to Mrs. Elizabeth Purse Clinton of Chattanooga, Tenn., December 13.

ALVA RICHARD TAYLOR, Fort Lauderdale, Fla., to Dr. Garland Marian Johnson of Jackson, Tenn., September 29.

PAUL WARD ROBINETT, Huntington, W. Va., to Miss Shirley Harwood Kersey of Richmond, Va., December 31.

KARL CRAWFORD JONAS, Marion, N. C., to Mrs. Bonnie Babcock Brooks in Philadelphia, November 24.

ROBERT E. STOWELL, St. Louis, to Miss Eva Mae Chambers in Jacksonville, Ill., December 1.

JAMES J. LEDGARD JR., Maynard, Mass., to Miss Dana Lee Catt of Brooklyn, October 4.

ANNE LOUISE HENDRICKS, Fort Lauderdale, Fla., to Mr. Robert McCurdy recently.

JACK M. LEVIN, Atlanta, Ga., to Miss Adele Segall of Miami, Fla., October 18.

Correspondence

CORONARY OCCLUSION AND THROMBOSIS AND MYOCARDIAL INFARCTION

To the Editor: — The discussion by Blumgart, Boas and others and by Master regarding the effect of effort on the incidence of coronary occlusion, coronary thrombosis and myocardial infarction shows the need of more precise use of these terms.

Blumgart (THE JOURNAL, July 14, 1945, p. 775) contributes a report on the relation of effort to "attacks" of acute myocardial infarction as he saw it in army training camps. Acute myocardial infarction does not occur as an "attack" per se but is a result of sudden deprivation of an area of heart muscle of its blood supply by occlusion of the main supplying artery or a sufficient number of its branches. Arteriosclerosis is generally the underlying cause of the narrowing of the artery, but this is never a sudden process. The occlusion caused by atheromatous intimal thickening may reach a point where a slight increase in myocardial effort will result in cardiac collapse. This, however, does not necessarily include anemic infarction unless a state of anemia exists in the area and for a sufficient time. This can be accomplished quickly by the addition of thrombotic elements to an atheroma, completely sealing off an already greatly narrowed lumen. Sudden hemorrhage into an atheroma during the systolic rise involved in sudden severe effort might conceivably result in complete arterial block, but in the course of careful gross and microscopic study of infarcted hearts in a period of twenty-five years this intra-atheromatous hemorrhage has rarely impressed me as sufficient to produce complete arterial occlusion.

"Coronary thrombosis" has a fairly definite meaning to the internist, with its suddenness, the severe pain, the obvious collapse of ventricular power, and in addition the electrocardiographic picture. To the pathologist there is no thrombosis unless an actual thrombus is demonstrable. How long does it take for a thrombus to form in an organ like the heart which is shaking itself in systole and diastole 100 to 150 times a minute during strenuous work or exercise? No one knows. Presumably it will not develop at all when (1) the arteries are normal or (2) the current of the blood stream is not excessively slowed. However, assuming that an atheroma has been formed in the course of time near the base of a main stem coronary artery and following extension of the degeneration so as to injure the intima a partially occluding thrombus has been laid down at this point, what might be the effect of sudden severe effort on the ability of the thrombus to stay put? I think I have proved satisfactorily in a few cases that such a thrombus has been torn loose at the time of the exertion and forced distally about 0.5 cm. to occlude completely the anterior descending branch of the left coronary artery, resulting in anemic infarction. This proof of the relation of exertion to myocardial necrosis is rarely obtained because of a common technical error in postmortem dissection of the heart. The usual insertion of a scissors blade into the mouth of an artery and cutting distally will disclose the thrombus but often at a point beyond the former site of the clot, because it is apt to be pushed forward out of its original position. Careful removal of the "roof" of the artery by lifting a longitudinal wedge will disclose the clot in situ vero. I described this method in the *Transactions of the American Clinical and Climatological Association* for 1932 in an article by L. W. Gorham and others.

It is of great immediate importance that medical experts show more unanimity on such a basic matter as the effect of exertion on the arteriosclerotic heart. Compensation courts daily hear statements that a claimant while lifting a heavy object felt a severe pain in his midchest, collapsed and in an hour was dead, with autopsy showing cardiac infarction, old atheromatous arterial narrowing and fresh coronary thrombosis. The expert on the opposite side may swear that there is no relation between the heavy lifting and the cardiac collapse. The referee is more inclined to accept a causal relationship between the exertion and the fatality and, in my opinion, is more apt to be right than wrong. Rest and not exertion is the basic component of cardiac therapy. While compensation courts with the greatest self assurance have settled to their own satisfaction the cause of cancer as related to trauma, I think they are on sound ground generally in insisting that excessive exertion has a bad effect on the arteriosclerotic heart. The fact that coronary occlusion can occur during sleep (when the systolic pressure is normally at its lowest ebb) does not in the least invalidate this principle.

The term "coronary occlusion" as the internist has come to employ it does not convey any idea of its cause. An artery can be occluded in many ways, for instance by intimal sclerosis or atheroma, which requires years or at least months, by thrombosis, which can be relatively sudden, or by embolism, which is the most sudden of all. Master assumes that coronary occlusion can be caused only by arteriosclerosis, but he is contradictory when he speaks of ". . . the hundreds of cases that the cardiologist has had in which coronary occlusion transpired during sleep, rest or mild and usual activity." (THE JOURNAL, Sept. 1, 1945, p. 90). It takes many sleeps indeed to produce arteriosclerotic occlusion.

VICTOR C. JACOBSEN, M.D., Troy, N. Y.

CAFFEINE WITH SODIUM BENZOATE FOR ACUTE ALCOHOLISM

To the Editor:—At the psychiatric division of Professors Wagner Jauregg and Poetzel in Vienna in 1937 and at the admitting room of St. Joseph Hospital from 1940 to 1945 I had the opportunity of studying alcoholism in its various manifestations. Ordinarily we used to resort to paraldehyde, restraints and seclusions for the disturbed resistive violent alcoholic addict, and we used to give various stimulants for the patient in an alcoholic coma. For the last two years we have not admitted acute alcoholic addicts to the wards of St. Joseph Hospital in Paterson, N. J., except patients in deep coma complicated by respiratory failure.

Immediately after arrival in the emergency room every alcoholic addict either violent or in coma received 15 grains (1 Gm.) of caffeine with sodium benzoate intravenously, the rate of injection being about ten seconds. The administration of caffeine with sodium benzoate to these patients was followed by improvement in the clinical state in forty-five seconds. Such improvement manifested itself in the arousal of the comatose patients in forty-five seconds and sedation of the excited group due to general stimulation of the central nervous system and inhibitory centers.

FRITZ F. ADLER, M.D., Paterson, N. J.

AMYELOIDEMIA VS. AGRANULOCYTOSIS

To the Editor:—Since the term "agranulocytosis" chosen by W. Schultz for the syndrome of diminished leukocytes in the blood means in its strict sense an increase in the nongranular leukocytes, it appears that a better term is necessary to designate this medical entity.

Neutropenia is displacing the term granulocytopenia, which may occur in a mild or severe form with angina. It may be wise for clarity to substitute the term amyeloidemia for agranulocytosis when it refers to a complete absence of the myeloid series of white cells in the blood. Since all the cells of the

myeloid series are involved in this syndrome the coined terms of aneutremia or aneutrophilemia, signifying the absence of neutrophils in the blood, is not warranted.

The term amylemia, referring to the presence of hypothetical starch in the blood, appears in Stedman's Dictionary. The possible presence of amyloid in the blood, amyloidemia, is a similar potential word. These are distinguishable by spelling and pronunciation from amyeloidemia.

BERNARD SELIGMAN, M.D., Brooklyn.

Bureau of Investigation

CEASE AND DESIST ORDERS

Abstracts of Certain Federal Trade Commission Releases

The work of the Federal Trade Commission in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug and Cosmetic Act of 1938 increased the Food and Drug Administration's control of the advertising claims and statements made on the label of a medicine or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in circulars, newspapers and magazines and over the air, comes more actively under the purview of the Federal Trade Commission by virtue of the Wheeler-Lea Amendment.

THE JOURNAL has at various times commented on the activities of the Federal Trade Commission in this connection, even before the Wheeler-Lea Amendment gave it its added powers. In some cases the Commission may accept from the person or concern involved a stipulation that the objectionable practices or claims cited will be discontinued. In other cases the Commission issues what is known as a Cease and Desist Order, in which the individual, manufacturer or distributor cited is ordered to cease and desist from practices which have been declared objectionable. In some cases the claims cited have been discontinued by the firms several months (or even longer) before the issuance of the order. Abstracts of some of the orders issued in 1943, 1944 and 1945 follow in this form: name of product, name of distributor, date of issuance of complaint, date of issuance of Cease and Desist Order and terms of order.

Alimentone.—Thomas E. Collins, trading as Thomas E. Collins Company, San Francisco; complaint issued August 24, 1942; order issued Nov. 1, 1943. Order directed the respondent to cease representing that his product expels mucus from the body, affords relief for catarrhal conditions generally, aids in fortifying mucous membranes against infection, possesses any value in the treatment of inflammation of the mucous membranes, eliminates toxic substances or deposits from the body, or is a cure or remedy for colds. The findings were that the preparation is composed of powdered wheat embryo, powdered dried skim milk and vegetable concentrates, and that though it may have some food value, it is wholly without effect as a therapeutic agent.

Cuproloid.—Charboy Products, Inc., Red Bank, N. J.; complaint issued May 7, 1942; order issued Jan. 24, 1944. Order directed the concern to discontinue any advertisements which represented product as being of value in treatment of, or constituting a cure or remedy for pimples, acne, surface ulcers, burns, poison ivy, athlete's foot and some other skin disorders, or possessing sterilizing or healing properties, keeping the skin healthy, being approved by competent medical authorities or prescribed by the medical profession.

McFadden 3 Sisters Springs Mineral Waters.—Roy A. Whipple and Mrs. Ruth Carter Whipple, trading as McFadden 3 Sisters Springs, Hot Springs National Park, Ark.; complaint issued April 17, 1943; order issued Dec. 7, 1943. Order directed the respondents, who reside in Winnetka, Ill., to discontinue advertisements representing that their waters or any other products of substantially similar composition will eliminate poisons from the system to any significant extent, or will be effective in removing excess acids and impurities through the kidneys and bladder; that the use of these waters will maintain a proper balance of minerals in the body or that any of the waters is a cure or remedy for the various ailments and diseases enumerated in the advertisements. These consisted of more than twenty, and included arthritis, neuritis, Bright's disease, diabetes, anemia, nervous prostration, high or low blood pressure, gallstones and sinusitis.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, Feb. 16, page 445.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Mar. 19-21. Sec. Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ALASKA: Juneau, March 5. Sec., Dr. W. M. Whitehead, Box 140, Juneau.

ARIZONA: * *Examination.* Phoenix, April 2-3. *Endorsement.* Phoenix, April 6. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: * *Medical.* Little Rock, June 6-7. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 6. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Written.* Los Angeles, March 11-14. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

COLORADO: * Denver, April 2-5. Final date for filing application is March 18. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

CONNECTICUT: * *Medical. Examination.* New Haven, March 12-13. *Endorsement.* New Haven, March 26. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 12-13. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: *Examination.* Dover, April 9. *Reciprocity.* Dover, April 16. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * *Reciprocity.* Washington, March 11. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: * Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaik, 2736 S.W. Seventh Ave., Miami 36.

GEORGIA: Atlanta and Augusta, March 27-28. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

IDAHO: Boise, July 9. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

ILLINOIS: *Examination.* Chicago, April 2-3. *Reciprocity.* Chicago, April 4. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, April 25-27. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

IOWA: * Iowa City, March 25-27. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

KANSAS: Kansas City, March 12-13. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Portland, March 12-13. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Medical.* Baltimore, March 19-22. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, June 18-19. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, March 12-15. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston.

MICHIGAN: * Detroit, March 26-28. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MISSISSIPPI: June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

MISSOURI: *Examination.* St. Louis, Feb. 25-27. Sec., State Board of Health, Dr. R. M. James, State Capitol Bldg., Jefferson City.

MONTANA: Helena, April 1-3. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA: * Omaha, March 25-27. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Jan. 28-31. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, March 25-28. Act. Sec., Mrs. Louise J. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus. March 19-22. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, March 23. Sec., Dr. J. D. Osborn Jr., Frederick.

PENNSYLVANIA: Philadelphia and Pittsburgh, April. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Building, Harrisburg.

RHODE ISLAND: Providence, April 4-5. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, Feb. 24-26. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * Pierre, July 16-17. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TENNESSEE: * Memphis and Nashville, March 27-29. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

TEXAS: Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, March or April. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: * Richmond, March 25-28. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WASHINGTON: * Seattle, July 11-12. Sec., Department of Licenses, Miss Nell Adams, Olympia.

WEST VIRGINIA: Charleston, April 1-3. Commissioner, Public Health Council, John E. Offner, State Capitol, Charleston 5.

WYOMING: Cheyenne, Feb. 4. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

COLORADO: Denver, March 6-7. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

DISTRICT OF COLUMBIA: Washington, April 22-23. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, April 9. Dir., Division of Licensure & Registration, H. W. Grefe, Capitol Bldg., Des Moines 19.

MICHIGAN: Ann Arbor and Detroit, May 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, April 2-3. Sec., Dr. Raymond N. Bieter, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, May 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

OREGON: Portland, March 2. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, Feb. 13. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Vermillion, March 13-14. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Memphis and Nashville, March 25-26. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Madison, April 6. Prof. R. N. Bauer, 152 W. Wisconsin Ave., Milwaukee 3.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Chiropodists: Authorized to Use Narcotics as Local Anesthetic.—The plaintiffs commenced the present suit, an original mandamus action, in the Supreme Court of Michigan to compel the defendants, Michigan Board of Pharmacy and Director of Drugs and Drug Stores, to issue them narcotic permits.

In 1943, prior to which chiropodists were issued narcotic permits, the attorney general of Michigan issued an opinion to the Director of Drugs and Drug Stores to the effect that there was nothing in the chiropody act giving chiropodists any right to use narcotics; that chiropodists were permitted to use "only local anesthetics such as butaline or 2 per cent novocain, evidently claimed to be non-narcotic." Plaintiffs, licensed chiropodists, accordingly filed suit in the federal court to restrain the collector of internal revenue from refusing to accept their applications for reregistration under the Harrison Narcotic Act and to compel the collector to issue special stamps as evidence of such reregistration. The district court defined local anesthetics as

> . . . anaesthetics that when locally applied produce an absence of sensation in the organ or tissue treated. Narcotics, including cocaine, other derivatives of coca leaves, and similar compounds when properly applied produce such an effect, and are used as local anaesthetics.

The district court also pointed out that the Michigan law is similar to the uniform narcotic act, adopted by a number of states, and that the attorneys general of at least six of those states have ruled that chiropodists are entitled to use narcotics thereunder. It entered a decree in favor of the plaintiffs, but this decree was reversed by the circuit court of appeals on the ground that a federal court should not undertake the interpretation of a local law without some views of the local judges familiar with the trends of local law. The present suit was then instituted.

Section 2 of the Michigan chiropody act provides that a certificate of qualification or license "shall not authorize chiropodists to amputate the human foot or toes, or to use or administer anaesthetics other than local." Section 1 of the uniform narcotic drug act, adopted by Michigan in 1937, defines a physician as "a licensed practitioner of medicine or osteopathy as defined by law in this state and any other person authorized by law to treat sick and injured human beings in this state and to use narcotic drugs in connection with such treatment."

The defendants contended that since chiropodists are not mentioned in the narcotic act, which specifically mentions physicians, it was the intention of the legislature to exclude them. This contention, said the Supreme Court, overlooks the broader definition of physician in the act, namely, ". . . any other person authorized by law to treat sick and injured human beings in this state and to use narcotic drugs in connection with such treatment." Chiropodists, the court continued, are called on to perform many operations such as removal of ingrowing nails, growths and callosities on the foot and manipulation of the bones of the foot, all of which would cause tremendous pain to the patient were anesthetics not used. The narcotic act and the chiropody act, said the court, taken together, indicate that a chiropodist may use local anesthetics. Local anesthesia is "that which is confined to one limited part of the body." It is the use of local anesthesia to which a chiropodist is restricted, concluded the court, not the agency employed to bring about such anesthesia. Accordingly judgment was entered in favor of the plaintiffs.—*Fowler v. Michigan Board of Pharmacy, 20 N. W. (2d) 680 (Mich., 1945).*

Medical Practice Acts: Revocation of License for Violation of Harrison Narcotic Act.—The plaintiff, having pleaded guilty, in the federal district court, to a violation of the Harrison Narcotic Act, was cited to appear before the defendant, Board of Medical Examiners, to show cause why his license to practice medicine and surgery should not be revoked for acts of unprofessional conduct. After a hearing, the defendant revoked the plaintiff's license. Subsequently the plaintiff filed suit in the superior court to show cause why the board's action should not be set aside. The superior court sustained the board, and the plaintiff appealed to the Supreme Court of Arizona.

The plaintiff first contended that the Board of Medical Examiners had no jurisdiction to revoke his license. He argued that the present board was created by legislation in 1935 and that it possessed only the powers set forth in the act creating it rather than the powers of the old board created in 1928 but dissolved by the 1935 enactment. The effect of the 1935 law, insisted the plaintiff, was to drop the provisions of prior laws, including the power of the board to revoke or cancel licenses. The Supreme Court quoted with approval from its decision in *Marlar* v. *Patterson*, 60 Ariz. 240, 135 P. (2d) 218, in which a similar contention was raised, as follows:

> The Medical Practice Act was amended in 1935, chapter 99, session laws of that year, and we are unable to see why the plaintiff claims that they made the board of examiners merely a board of registration. The first change made deals with the makeup of the board and the length of term each shall serve, and the second made the practice of medicine without having a valid recorded certificate a felony instead of a misdemeanor. Then there was added a section providing that every person practicing medicine, surgery or osteopathy in the state shall renew his license each year by the payment of $3 on or before January 1. Clearly these amendments had no effect whatever on the other provisions of the Medical Practice Act.

Under that decision the Supreme Court held that provisions not covered by the 1935 amendment remained in effect.

The Arizona code (Sec. 67-1106, A. C. A. 1939) provides that

> . . . Whenever a holder of a certificate is guilty of unprofessional conduct, or whenever a certificate has been procured by fraud or misrepresentation, or issued by mistake, the board shall revoke the same after citation and hearing thereon. . . .
>
> The words "unprofessional conduct" shall include . . . conviction of any offense involving moral turpitude, . . .

The Supreme Court held, as it had in *Du Vall* v. *Board of Medical Examiners of Arizona*, 49 Ariz. 329, 66 P. (2d) 1026, that a conviction under the Harrison Narcotic Act negatives any and all presumptions of good faith on the part of the defendant and brands him as a person of bad moral character, unfit to practice medicine. On the basis of these cases, therefore, the judgment in favor of the Board of Medical Examiners was affirmed.—*Garlington v. Smith, 163 P. (2d) 685 (Ariz., 1945).*

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

50:471-594 (Nov.) 1945. **Partial Index**

Placental Senescence and Onset of Labor. H. S. Mandel, S. Graff and Ada M. Graff.—p. 471.
*Treatment of Carcinoma of Cervix by Interstitial Radium Needles at Rhode Island Hospital: Supplemental Report. G. W. Waterman and R. DiLeone.—p. 482.
Complete Abdominal Hysterectomy: Impressions Based on 135 Cases. R. W. Mohler and E. H. Bishop.—p. 489.
Isometric Method of X-Ray Pelvimetry as Routine Procedure. C. M. McLane.—p. 495.
*Androgen Therapy of Menopausal Symptoms in Cancer Patients. S. B. Gusberg.—p. 502.
Lactobacillus Therapy in Vaginitis Due to Trichomonas. L. Brady and R. D. Reid.—p. 509.
Benzyl Penicillin—Clinical Toxicity and Efficacy by Mouth in Impetigo in the Newborn Infant: Preliminary Report. T. O. Gamble, L. C. Miller and M. L. Tainter.—p. 514.
*Nausea of Pregnancy Treated by Forced Hydration. W. C. Eller and J. H. Randall.—p. 518.
Suppurating Fibromyomas: Report of Case, with Review of Literature. I. Miller.—p. 522.
Paracervical Anesthesia for Relief of Labor Pains. S. S. Rosenfeld. —p. 527.
Nonclotting Component of Postpartum Blood. E. Greenberg.—p. 532.
Primary Ovarian Pregnancy. J. F. Norton and N. M. Alter.—p. 535.
Arrhenoblastoma. D. C. Daughtry.—p. 539.
Edema of Uvula and Edema of Glottis—Reaction to Demerol-Scopolamine Analgesia. M. Steinberg.—p. 542.
Phantom Limb Syndrome Complicating Pregnancy and Puerperium. G. A. Williams—p. 546.
Erythroblastosis Fetalis in Twin Pregnancy. M. E. Aaberg and C. Roby. —p. 548.
*Reactivation of Endometriosis by Stilbestrol Therapy. R. L. Faulkner and E. A. Riemenschneider.—p. 560.

Interstitial Radium Needles for Carcinoma of Cervix.—Waterman and DiLeone report ten year survival rates in 309 cases treated at the Gynecologic Tumor Clinic at the Rhode Island Hospital, seen from 1926 through 1933 and previously reported for five year survivals. They add a new series of 198 cases which passed through the clinic from 1934 through 1938 and review the total of 507 cases, 1926 through 1938. The five and ten year survival rates for 309 cases for stage 1 carcinoma were 73 and 46 per cent respectively; for stage 2 they were 54 and 39 per cent respectively; for stage 3 they were 32 and 21 per cent; in patients with stage 4 carcinoma there were neither five nor ten year survivals. The survival rates for all stages was 35.7 per cent after five years and 24.5 per cent after ten years. For the new series of 198 cases the relative five year survival rate was 36.7 per cent. In 1933 the use of high voltage x-rays had been instituted as part of the treatment. It soon became evident that severe reactions were occurring. A better spacing of the x-ray and radium treatment seems to have corrected this fault fairly well, so that in the years 1936 to 1938 inclusive the five year results are shown as 39.3 per cent absolute and 44.9 per cent relative survivals. The total of 507 cases had a relative five year survival rate of 36 per cent. A review of the survival rates by age groups shows that for those 45 and under the five year survival rate was 38 per cent, for those 46 and over 29.5 per cent. The good results previously reported with the use of interstitial long platinum needles of low intensity are maintained in this series and are definitely improved with the added use of x-ray therapy in the last 109 cases.

Androgen Therapy of Menopausal Symptoms in Cancer Patients.—Gusberg administered androgen to a selected group of 24 patients who had been subjected to surgery, irradiation or both for neoplastic disease or dysfunctional bleeding from the reproductive tract. The patients were given 20 mg. of methyl testosterone by mouth daily for four weeks, then 10 mg. daily for two weeks thereafter. This therapy was usually adequate to control symptoms. The vasomotor symptom of the menopause disappeared in 23 of the 24 patients. Some benefit was noted in all patients who received an adequate course of treatment. Of 12 patients who had had previous diethylstilbestrol therapy, 10 were benefited to a greater degree by the androgens. The other 2 had taken diethylstilbestrol for years and the habit was difficult to break. The percentage of menopausal women who require endocrine treatment is small; the majority of patients undergoing either a spontaneous or an artificial menopause require no treatment.

Nausea of Pregnancy Treated by Forced Hydration.—Eller and Randall employed forced hydration for the nausea of pregnancy, which they believe results from the high concentration of chorionic gonadotropin present during the first trimester. Increased elimination by the kidneys should lower this concentration below a theoretical "nausea threshold," with resultant relief of symptoms. As soon as they notice nausea the women are advised to begin drinking 4 glasses of water between breakfast and lunch, 5 glasses between lunch and supper and 6 glasses between supper and bedtime. This hydration will require getting up at night, and a glass of water should be taken each time the patient gets up. If water is vomited, the same amount should be immediately taken again. Hot water or salt water may be retained more easily. Of 68 pregnant women with symptoms of nausea and/or vomiting subjected to this treatment 32 were relieved within four days, another 10 in seven days. In the remaining 26 cases the results varied from fair to very poor.

Reactivation of Endometriosis by Diethylstilbestrol Therapy.—Faulkner and Riemenschneider report that a woman aged 36, who had severe periodic bleeding from endometriosis of the bowel requiring over seventy transfusions, was finally treated by surgical castration and was well until given diethylstilbestrol for menopausal symptoms, when severe recurrence of the bleeding took place. Permanent recovery followed discontinuance of this therapy.

Am. J. of Orthodontics and Oral Surgery, St. Louis

31:541-696 (Nov.) 1945

Albers-Schönberg Disease: 2 Cases. G. R. Winter.—p. 637.
Teratoid Parasites of Mouth (Episphenoids, Epipalati [Epurani], Epignathi). W. E. Ehrich.—p. 650.
Anti-Infectious Properties of Saliva—A Review. J. L. T. Appleton. —p. 659.
Two Cases of Sublingual Dermoid and a Case of Protrusion of Mandible. R. H. Ivy and L. Curtis.—p. 666.
Analysis of Mechanics of Periodontal Membrane. A. B. Gabel.—p. 675.
Hematologic Findings in Fusospirochetal Stomatitis. L. W. Burket. —p. 681.
Mandibular Lesion as First Evidence of Multiple Myeloma. T. M. Meloy, J. H. Gunter and D. A. Sampson.—p. 685.
Treatment of Fusospirochetal and Streptococcal Infections by Topical Application of Penicillin. S. L. Rosenthal.—p. 690.
*Unilateral Lacrimation Associated with Chewing. I. B. Bender.—p. 692.
Stomatitis Due to Chewing Leaves of Poison Ivy: Report of a Case. R. K. Sassaman.—p. 695.

Unilateral Lacrimation During Chewing.—Bender reports a case in which stimulation of the anterior palatine pad area only brought about congestion, lacrimation and pain. The effects were best produced by rubbing with a finger or denture pressure through food mastication. While the symptoms could be produced by reading small print and blowing the nose, the dental complaint was the more important. The pad area was definitely localized as the trigger point by the fact that unilateral biting and movements of the muscles of mastication did not reproduce the syndrome. When there is independent biting either on the right or on the left side there is no compression or rubbing on the pad area. With normal chewing the force of mastication produces a pressure because of the closeness of adaptation of the dentures on the yielding mucosal tissues. This case differs from those reported in the literature in that, associated with lacrimation, there was also congestion and pain. Whether this can be attributed to a stimulation of both the autonomic and the sensory systems is difficult to say.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

29:587-686 (Nov.) 1945

Retardation and Suppression of Experimental Early Syphilis by Small Doses of Penicillin Comparable to Those Used in Treatment of Gonorrhea. H. J. Magnuson and H. Eagle.—p. 587.
Studies on Liver Function: I. Liver Function in Early Syphilis Before and During Massive Arsenotherapy. M. M. Hoffman and F. Kalz. —p. 596.
Report of Chancre Developing in Patient with Cardiovascular Syphilis. E. W. Thomas, Gertrude Wexler and M. Schur.—p. 604.
Treatment of Granuloma Inguinale with Anthiomaline: Report of Case with Extragenital Lesion. L. C. Goldberg.—p. 608.
Lymphogranuloma Venereum: Diagnostic Aids: I. Formol-Gel Test. F. C. Combes, O. Canizares and S. Landy.—p. 611.
Inguinal Lymphogranuloma Venereum in Male: Study of 750 Consecutive Cases from Panama. H. A. Tucker.—p. 619.
In Vitro Action of Penicillin on Hemophilus Ducreyi. T. Tung and C. N. Frazier.—p. 629.
Studies on Chancroid: II. Efficiency of Cultural Method of Diagnosis. P. B. Beeson and A. Heyman.—p. 633.
Effect of Respiratory Sulfadiazine Prophylactic Program on Incidence of Sulfonamide Resistant Gonorrhea. R. H. Abrahamson.—p. 641.
Accelerated Schedule for Treatment of Gonorrhea with Penicillin on Outpatient Basis. F. G. Gillick and B. D. Chinn.—p. 644.
Contact Education Interview: Its Functions, Principles and Technics in Venereal Disease Contact Investigation. H. Ennes Jr. and T. G. Bennett.—p. 647.

American Journal of Tropical Medicine, Baltimore

25:379-446 (Sept.) 1945

Report of Attack of Blackwater Fever Subsequent to Induced Malaria. S. F. Kitchen and G. G. Sadler.—p. 379.
Dourouculi (Aotus) in Laboratory Cycles of Yellow Fever. M. Bates and M. Roca-Garcia.—p. 385.
Specificity of Toxic Factors Associated with Epidemic and Murine Strains of Typhus Rickettsiae. H. L. Hamilton.—p. 391.
Dengue-like Fever on Isthmus of Panama. L. M. Fairchild.—p. 397.
*Chemotherapy of Human Filariasis by Administration of Neostibosan: Second Report. J. T. Culbertson, H. M. Rose and J. Oliver-Gonzalez. —p. 403.
Hyperendemicity of Schistosomiasis Japonica on Leyte Island, P. I. F. Bang, M. S. Ferguson, N. G. Hairston and O. H. Graham.—p. 407.
Transfusions of Red Cells in Malaria: Experimental Study in Ducks. R. H. Rigdon and N. B. Varnadoe.—p. 409.
The Rh Factor in Blackwater Fever: Preliminary Note. D. C. A. Butts. —p. 417.
Simultaneous Vaccination Against Bacillary Dysentery and Cholera with Toxoid Vaccine. O. Felsenfeld and Viola M. Young.—p. 421.
Pneumonias in Panama: Study of 500 Consecutive Cases. I. L. Applebaum and J. Shrager.—p. 423.
*Risk of Attack in Leprosy in Relation to Age at Exposure. J. A. Doull, R. S. Guinto, J. N. Rodriguez and H. Bancroft.—p. 435.
Treatment of Lambliasis with Acranil. D. A. Berberian.—p. 441.

Chemotherapy of Human Filariasis with Neostibosan.—Thirty native Puerto Ricans infected with Wuchereria bancrofti were treated with neostibosan for from thirty-three to forty-eight days. All patients were given three injections of neostibosan on alternate days, the first usually containing 50 mg., the second 100 or 150 mg. and the third 300 mg. of the drug. Thereafter 300 mg. of the drug was given in single doses daily or on alternate days. Culbertson and his co-workers report that after twelve months 13 of the patients were free from circulating microfilariae and 5 others had lost from 87 to 99 per cent of their embryos, compared with the number in the blood before treatment. The 12 remaining patients showed little promise of eventual eradication of their infections after observation for nine months. Of 15 control untreated patients infected with Wuchereria bancrofti, all remained infected for fourteen months of observation. In this interval 12 showed an overall increase and 3 showed a decrease in the number of circulating microfilariae. Among the treated patients, some of whom had been free from microfilariae for twelve months, none presented untoward symptoms referable to treatment. At the end of the course of therapy little or no change had occurred in microfilaria levels of the patients. The simplest explanation for this slow loss of microfilariae is that the neostibosan does not act directly on the microfilariae but acts chiefly on the adult parasites. As a result of the death of the adult worms, the production of embryos ceases.

Leprosy in Relation to Age at Exposure.—Doull and his co-workers studied 1,520 individuals living in the province of Cebu, Philippine Islands, and exposed in the household to lepromatous leprosy. There is a clear relationship between age at time of exposure and the risk of developing lepromatous leprosy. It is highest for those exposed before the age of 5 years, decreasing progressively as the age at time of exposure increases. This is true for both males and females. The ratio of the incidence rates for males and females, for those exposed before 5 years of age, varies from 4.7:1 as rates in the age group 5 to 10 years to 1.4:1 for those 20 years and over. The average interval between exposure and development of lepromatous leprosy was 10.5 years for those exposed under 10 years of age but only six years for those exposed after the age of 10 years.

American Review of Tuberculosis, New York

52:355-448 (Nov.) 1945

Indications for Intrapleural Pneumolysis: Review of 567 Thoracoscopic Examinations. H. A. Jones.—p. 355.
Diaphragmatic Paralysis and Pneumoperitoneum: Therapeutic Observations in White Patients. H. E. Crow and F. C. Whelchel.—p. 367.
Pneumoperitoneum and Diaphragmatic Paralysis: Therapeutic Observations in 110 Negroes. N. L. Anderson and W. D. Winn.—p. 380.
Tuberculosis in Children: Comparison Between Postmortem Material from Buffalo, New York and Santiago, Chile. J. Schwarz.—p. 392.
Degree of Tuberculin Sensitivity: Its Significance in Tuberculous Patients. R. W. Clarke.—p. 424.
Streptomycin in Experimental Tuberculosis: Its Effect on Tuberculous Infections in Mice Produced by M. Tuberculosis var. Hominis. G. P. Youmans and J. C. McCarter.—p. 432.

Annals of Surgery, Philadelphia

122:745-904 (Nov.) 1945

*Study of Shock in Battle Casualties: Measurements of Blood Volume Changes Occurring in Response to Therapy. C. P. Emerson Jr. and R. V. Ebert.—p. 745.
Comparative Study of 100 Fractures of Shaft of Femur in Which One Half Were Treated with Penicillin. S. A. Collom Jr. and W. M. Ewing.—p. 773.
Thoracoabdominal Injuries: Report of 29 Operated Cases. R. H. Betts. —p. 793.
Anesthesia for Men Wounded in Battle. H. K. Beecher.—p. 807.
*Mucoepidermoid Tumors of Salivary Glands. F. W. Stewart, F. W. Foote and W. F. Becker.—p. 820.
Regional Enteritis. H. L. Pugh.—p. 845.
Second Five Year Period Experience in Total Thyroidectomy. A. E. Hertzler.—p. 862.
Ainhum (Dactylolysis Spontanea): Report of 2 Cases from Illinois. A. M. Vaughn, J. W. Howser and G. Shropshear.—p. 868.
Observations on Surgical Treatment of Hernia. W. W. MacGregor. —p. 878.
Use of Heterogenous Fascial Grafts in Radical Operation for Herniae. J. Chandy.—p. 885.
Renal Decapsulation for Transfusion Oliguria. J. H. Lyons and S. L. Raines.—p 894.
Use of Fluorescent Wheals in Determining Extent and Degree of Peripheral Vascular Insufficiency: Further Observations. J. L. Neller. —p. 898.

Shock in Battle Casualties.—Emerson and Ebert report studies on 112 battle casualties admitted to a field hospital with serious abdominal, chest or extremity wounds. Fifty per cent of these patients were in severe shock. The arterial blood pressure was found to provide the most reliable index of blood volume deficiency. Patients with initial systolic pressures below 85 mm. of mercury were found to have oligemia; all patients with this degree of hypotension had a diminution in blood volume that exceeded 25 per cent. A normal hematocrit reading or the demonstration of a mild anemia within a few hours after injury does not mean that severe loss of blood has not occurred. Anemia was produced by the administration of plasma to patients with severe oligemia. The majority of patients presented no evidence of an excessive loss of plasma in proportion to red cells; in a few cases with severe abdominal wounds there was demonstrated a disproportionate plasma loss, which resulted in a mild degree of erythroconcentration. Hemorrhage appeared to have been most severe in patients with extremity wounds and least severe in patients with uncomplicated chest wounds. Blood volume measurements performed preoperatively and postoperatively revealed that the average loss in 3 cases subjected to open thoracotomy was 600 cc. of blood; in 5 cases of abdominal surgery the average loss was 2,200 cc. Serial determinations of the blood volume indicated that hemorrhage occurred during the course of transfusion therapy in 11 of 23 patients studied. Plasma protein measurements before and after the injection of blood diluted with equal volumes of preservative solution indicate that retention of the latter in the blood stream is transient and of insufficient degree to produce significant hemodilution. The mortality incidence of all patients admitted in severe shock

was 32 per cent; of those whose arterial pressure on admission exceeded 85 mm. of mercury, 11 per cent died within a similar period, which included the first postoperative day. The majority of deaths were attributable to penetrating abdominal wounds. Cases are described in which the clinical signs of shock were unrelieved by therapy, despite complete restoration of the blood volume to normal. The factors operative in the production of "irreversible shock" included severe infection, lesions involving the central nervous system, anoxic anoxia due to pulmonary damage and long persisting combination of anemia, oligemia and hypotension, with terminal signs of myocardial insufficiency.

Mucoepidermoid Tumors of Salivary Glands.—Stewart and his associates observed a group of salivary gland tumors differing structurally from tumors primary to these locations. They estimate the incidence of these tumors at 5 per cent of all salivary gland tumors. The material for this analysis was obtained from the Memorial Hospital (New York) records of about 700 salivary gland tumors seen between 1928 and 1943. A total of 45 cases was found. The authors divide the tumors into two histologic varieties, which they refer to as benign and malignant, but they admit that it might be preferable to speak of a "relatively favorable" and a "highly unfavorable" group. The term "benign" is scarcely ever applicable in an absolute sense and as used here does not necessarily imply innocent behavior. It does mean that thus far metastasis has not been observed from such tumors. Epidermoid metaplasia is one of the main cytologic characteristics of both classes of mucoepidermoid tumors. Whereas the basal cells are the principal type involved in this transformation, there is evidence that both mucous cells and columnar cells may undergo similar changes. The benign form of tumor is most frequent in younger and the malignant form in older persons. The most important initial symptom in benign tumors was painless swelling, but this was an initial symptom also in 8 of the 19 malignant tumors. Surgical excision and irradiation were the treatments used in these tumors. The results were favorable in patients with benign tumors, but the survival rate of the patients with malignant tumors was poor.

Cancer Research, Baltimore

5:609-672 (Nov.) 1945

Dependence of Tumor Formation on Degree of Caloric Restriction. A. Tannenbaum.—p. 609.
Dependence of Tumor Formation on Composition of Calory Restricted Diet as Well as on Degree of Restriction. A. Tannenbaum.—p. 616.
Glyoxalase Activity of Liver from Rats Fed p-Dimethylaminoazobenzene. P. P. Cohen.—p. 626.
Glyoxalase Activity of Erythrocytes from Cancerous Rats and Human Subjects. P. P. Cohen and Eva K. Sober.—p. 631.
Biologic Assay of Carcinogens. D. E. Lea.—p. 633.
Certain Effects of Egg White and Biotin on the Carcinogenicity of p-Dimethylaminoazobenzene in Rats Fed Subprotective Level of Riboflavin. B. E. Kline, J. A. Miller and H. P. Rusch.—641.
Spontaneous Malignant Mixed Tumors of Rat, and Successful Transplantation and Separation of Both Components from Mammary Tumor. Wilhelmina F. Dunning, Maynie R. Curtis and M. E. Maun.—p. 644.
Development of Highly Malignant Tumor Strains from Naturally Occurring Avian Lymphomatosis. B. R. Burmester and C. O. Prickett.—p. 652.

Cincinnati Journal of Medicine

26:497-554 (Dec.) 1945

Treatment of Behavior Problems in Children. Othilda Krug-Brady.—p. 497.
Exotic Diseases in Returning Servicemen. W. M. Germain.—p. 515.

Diseases of Chest, Chicago

11:497-708 (Nov.-Dec.) 1945

Roentgen Ray: Its Past and Future. R. H. Morgan and Ira Lewis.—p. 502.
Sgments of Lungs: Commentary on Investigation and Morbid Radiology. A. F. Foster-Carter and C. Hoyle.—p. 511.
Roentgen Treatment for Hodgkin's Disease and Lymphosarcoma of Chest. A. U. Desjardins.—p. 565.
Length and Width Changes in Pulmonary Arterial System of Rabbits in Passing from Stage of Expiration to That of Collapse as Revealed by Roentgenography. C. C. Macklin.—p. 590.
Lateral Projection of Chest. S. Brown.—p. 596.
Clinical Value of Angiocardiography. H. K. Taylor.—p. 624.
Bearers of Shadows. M. de Abreu.—p. 639.
Neurogenic Tumors at Pulmonary Apex. L. W. Paul.—p. 648.
Intrathoracic Metallic Foreign Bodies. C. L. H. Garland.—p. 662.

Endocrinology, Springfield, Ill.

37:301-388 (Nov.) 1945

Biochemical Effects of Injections of Sex Hormones into Castrated Rats. K. W. Buchwald and L. Hudson.—p. 301.
Optimal Mating Time for Pregnancy in Monkey. G. Van Wagenen.—p. 307.
Glucose Tolerance in Rats Following Repeated Small Doses of Alloxan. E. G. Shipley and Adelle N. Rannefeld.—p. 313.
Metabolism of Steroid Hormones: Isolation of Δ^5-Androstenediol-3(β),17(α) and Δ^5-Pregnenediol-3(β),20(α). Sara Schiller, A. M. Miller, R. I. Dorfman, E. L. Sevringhaus and E. P. McCullagh.—p. 322.
Endocrine Function of Spleen and Its Participation in Pituitary-Adrenal Response to Stress. G. Ungar.—p. 329.
Comparison of Adrenal Steroid Diabetes and Pancreatic Diabetes in Rat. D. J. Ingle, R. Sheppard, J. S. Evans and M. H. Kuizenga.—p. 341.
Induction of Estrus in Ovariectomized Golden Hamster. A. H. Frank and R. M. Fraps.—p. 357.
Influence of Goitrogenic Compounds (Sulfonamides and Their Derivatives, Thiourea and Its Derivatives) on Respiration of Thyroid Tissue. S. R. Lerner and I. L. Chaikoff.—p. 362.
Activity of Synthetic Estrogens on Oral Administration in Domestic Fowl and Turkey. R. G. Jaap.—p. 369.

Epidemiol. Information Bulletin, Washington, D. C.

1:801-842 (Nov. 15) 1945

Epidemiological Notes: British Zone in Germany.—p. 801.
Id.: American Zone in Germany.—p. 803.
Id.: Berlin and Hamburg.—p. 805.
Id.: Yugoslavia.—p. 806.
Id.: Taranto Plague Outbreak.—p. 808.
Id.: Plague in Southeast China.—p. 808.
Current Reports on Prevalence of Certain Diseases: Data on Plague, Cholera, Yellow Fever, Smallpox, Typhus and so on Received from October 16 to 31, 1945.—p. 811.

1:843-884 (Nov. 30) 1945

Tuberculosis in Greece. J. B. McDougall.—p. 843.
Epidemiological Notes: The Netherlands.—p. 849.
Id.: Typhus Vaccination in Algeria.—p. 855.

Experimental Medicine and Surgery, Brooklyn

3:299-422 (Nov.) 1945. **Partial Index**

*Significance of Nutritional Deficiency in Diabetes. M. S. Biskind and H. Schreier.—p. 299.
Experimental Investigations on Pathogenesis of Infarcts. R. Jaffe.—p. 317.
Experiments Supporting Phase Boundary Theory of Electrical Potential in Nerve. T. C. Barnes and R. Beutner.—p. 325.
Observations on Formation, Storage and Excretion of Creatine and Creatinine in Rat in Relation to Phosphate and Carbohydrate Metabolism. H. H. Beard and P. Pizzolato.—p. 330.
Further Studies of Relation Between Creatine-Creatinine Metabolism and Several Body Measurements. H. H. Beard and P. Pizzolato.—p. 344.
Procaine Esterase Test in Toxic Goiter and Carcinoma. B. Kisch.—p. 357.
Pneumocardiogram. F. M. Groedel.—p. 361.
Phlebogram and Intrapneumothorax Pneumocardiogram: Comparative Study. P. R. Borchardt and F. M. Groedel.—p. 397.

Nutritional Deficiency in Diabetes.—Biskind and Schreier believe that diabetes mellitus represents in the vast majority of patients impairment of hepatic response to endogenous insulin and that this results from protracted vitamin B complex deficiency. Thus the concept of insulin resistance may be extended to include most patients with diabetes. Among 94 diabetic patients studied, every one showed signs and symptoms of deficiency of factors of the B complex. Intensive and persistent oral or oral and parenteral therapy with vitamin B complex led to striking improvement in general health and often to great improvement in carbohydrate metabolism, frequently with reduction in insulin requirement or its elimination altogether.

Georgia Medical Association Journal, Atlanta

34:213-238 (Nov.) 1945

Problems in Treatment of Rheumatic Heart Disease. J. Yampolsky.—p. 213.
Coronary Heart Disease: Diagnosis and Treatment. J. W. Brittingham.—p. 219.
Pain in Chest: Its Significance. C. C. Aven.—p. 221.
Fused Kidney, Having Supernumerary Ureter with Extravesical Orifice; Treated by Heminephrectomy of the Left Half. J. R. Rinker.—p. 225.

34:239-276 (Dec.) 1945

Concerning Georgia's Medical Needs: A Few Facts, Fallacies and Figures. C. W. Roberts.—p. 239.
Surgery of Peptic Ulcer. J. W. Turner.—p. 243.

Journal of Pediatrics, St. Louis

27:393-504 (Nov.) 1945

Results of Providing a Liberally Adequate Diet to Children in an Institution: I. Acceptance of Foods and Changes in Adequacy of Diets Consumed. Lydia J. Roberts, Ruth Blair and Marjorie Greider. —p. 393.

Id.: II. Growth in Weight and Height. Ruth Blair, Lydia J. Roberts and Marjorie Greider.—p. 410.

Id.: III. Blood and Urinary Excretion Studies Before and After Dietary Improvement. H. Oldham, Lydia J. Roberts and Marjorie Young.—p. 418.

Crying of Newly Born Babies: III. Early Period at Home. C. A. Aldrich, C. Sung and Catharine Knop.—p. 428.

Penicillin Therapy of Staphylococcus Aureus Hemolyticus Infection in Allergic Infant. Golda Fischer and Laura E. McClure.—p. 436.

*Penicillin Therapy in Rat Bite Fever. F. Brooksaler.—p. 442.

Penicillin Locally in Eyes of Newborn Infants to Prevent Ophthalmia Neonatorum. A. Bloxsom.—p. 447.

Unusual Fulminating Generalized Staphylococcus Infections Treated with Penicillin. L. Bashinsky.—p. 448.

Prognosis in Acute Glomerulonephritis in Children. J. H. Davis and H. K. Faber.—p. 453.

*Surgical Treatment of Congenital Atresia of Esophagus: Report of 4 Cases. C. R. Lam.—p. 456.

Erythema Exudativum Multiforme (Hebra), Bullous Type: Cases Seen in Contagious Disease Hospital. Mary W. C. Fletcher and Ruth C. Harris.—p. 465.

Pneumonia Due to Streptococcus Viridans: Review of Literature and Case Report of Infant. J. B. Reinhart and W. L. Venning.—p. 480.

Congenital Megacolon: Treatment with Mecholyl Bromide. M. G. Peterman.—p. 484.

Subcutaneous Administration of Sodium Sulfadiazine. K. Glaser and Grace Lawrence.—p. 492.

Penicillin in Rat Bite Fever.—Brooksaler reports a case of rat bite fever due to Streptobacillus moniliformis in a girl aged 18 months. The child was treated with penicillin, and the therapeutic response to this treatment was prompt and permanent. The strain of S. moniliformis recovered was susceptible to the bacteriostatic effect of penicillin in vitro. Penicillin is recommended as the treatment of choice in rat bite and Haverhill fevers.

Congenital Atresia of Esophagus.—Lam reports 4 cases of congenital atresia of the esophagus in which surgical treatment was employed. Three of the infants are now alive and well. The low mortality in this small series may be attributed in part to the fact that the 3 infants who survived were in excellent condition at the time of operation. Pneumonia from aspiration of milk during futile attempts at feeding was prevented because an early diagnosis was made. If the anomaly is suspected, barium should not be used to demonstrate it, since this contrast medium is irritating to the bronchial mucosa. A small amount of iodized oil should be introduced through the catheter under fluoroscopic control and removed after the film has been made. The operation for the repair of atresia of the esophagus is not necessarily an emergency operation. There was a delay of three days between the diagnosis and the procedure in case 3 because of the absence of the thoracic surgeon. Even a two week interval is not incompatible with a successful result. If the diagnosis is made reasonably early, there is ample time for an infant to be taken to a surgical center where there is a competent chest surgeon.

New England Journal of Medicine, Boston

233:547-576 (Nov. 8) 1945

*Nontuberculous Pneumonia Complicating Pulmonary Tuberculosis: Review of 111 Cases. G. F. Hogan.—p. 547.

*Night Cramps in Young Men. J. H. Nicholson and A. Falk.—p. 556.

Effects of Infection on Circulation. A. S. Freedberg and M. D. Altschule.—p. 560.

Acute Nephrosis (? Mercupurin). Acute Glomerulonephritis.—p. 567. Bilateral Bronchopneumonia.—p. 570.

Nontuberculous Pneumonia Complicating Pulmonary Tuberculosis.—Hogan reviews 111 cases of pneumonia complicating tuberculosis in 104 patients; 5 patients had more than one attack. These 111 cases constitute the proved cases discharged from the Philadelphia General Hospital with the combined diagnoses between June 1936 and June 1944. Of this series the course was atypical in 60 per cent, nearly three fourths of the active cases and more than half of the inactive ones. The outcome of pneumonia is altered by the presence of tuberculosis. The death rate in this series was 38 per cent, with deaths twice as numerous when the tuberculosis was active (56 per cent) as when it was inactive (30 per cent). Reactivation of a tuberculous focus that is quiescent or an increase of disease in already active tuberculosis may be expected in 15 per cent of the patients who develop superimposed pneumonia, whether or not it is in the same lobe and whether or not it is specifically treated. Definite therapeutic implications have not been derived from this study. If bacterial antagonism is the correct explanation for the infrequency of pneumonia complicating tuberculosis, therapeutic use of the products of the pneumococcus might be made in the treatment of pulmonary tuberculosis.

Night Cramps in Young Men.—In the course of nine months at an Army Air Force installation 35 men presented themselves for treatment. Nicholson and Falk present observations on 23 of these cases. The average age of the men was 25 years. A person with night cramps is usually free from symptoms during the day, whether resting or walking. He retires without symptoms but is awakened by a cramping pain usually in the calf muscles, although any muscle group in the lower extremity may be involved. Rarely muscle groups in other parts of the body are affected. Vigorous rubbing of the leg or hopping about gradually relaxes the muscles, but there is often a residual soreness lasting for hours. In the treatment of night cramps the authors used quinine sulfate. More than a fourth of their patients failed to obtain relief. The majority of those who obtained relief required a number of doses. The effect of this drug is short lived and not cumulative. The authors are unable to explain why patients should have relief for many days and not infrequently for weeks after ceasing medication. In slightly more than a third of the cases, underlying changes could not be found. The most frequent disorder predisposing to night cramps was static foot deformity, which occurred in 12 cases. Five of these patients also had symptoms directly referable to the feet. In all these cases orthopedic appliances had been used, with partial relief of foot symptoms but without change in the occurrence of the night cramps. In none of the patients was there found any peripheral arterial disease, although in 2 cases there was old deep thrombophlebitis of the lower extremities.

233:577-606 (Nov. 15) 1945

*Penicillin Blood Levels for Twenty-Four Hours Following Single Intramuscular Injection of Calcium Penicillin in Beeswax and Peanut Oil. M. J. Romansky and G. E. Rittman.—p. 577.

*Treatment of Gonococcal Urethritis with Single Injections of Penicillin-Beeswax-Peanut Oil Mixtures. W. Leifer, S. P. Martin and W. M. M. Kirby.—p. 583.

Surgical Relief for Tracheal Obstruction from Vascular Ring. R. E. Gross.—p. 586.

Death Following Intravenous Administration of Papaverine Hydrochloride: Report of 2 Cases. E. L. Sagall and A. Dorfman.—p. 590.

Rheumatoid Arthritis: Its Varied Clinical Manifestations. M. W. Ropes and W. Bauer.—p. 592.

Radiation Pneumonitis.—p. 597.

Osteoid Osteoma of Terminal Phalanx of Right Fifth Toe.—p. 601.

Calcium Penicillin in Beeswax and Peanut Oil.—Romansky and Rittman found that a single injection of 300,000 Oxford units of calcium penicillin in 4.8 per cent beeswax (by weight) in peanut oil contained in 1 cc. produces and maintains effective levels of penicillin in the blood for about twenty-four hours and continues to be excreted in the urine for approximately three days. Calcium penicillin in beeswax and peanut oil maintains its potency for at least nine months at refrigerator, room and 37 C. temperatures. Deterioration did not occur after twenty-four hours at 56 C. or after two hours at 100 C.

Single Injection of Penicillin-Beeswax-Peanut Oil Mixtures in Gonococcic Urethritis.—Leifer and his associates gave 217 men with gonococcic urethritis single intramuscular injections of from 100,000 to 300,000 units of penicillin suspended in mixtures of beeswax and peanut oil. Local or systemic toxic manifestations were not noted. Of 88 patients treated with single injections of 100,000 units 74 were cured, and of 91 treated with 300,000 units 83 were cured. The results with 300,000 units of penicillin in beeswax-peanut oil were comparable to those obtained with 100,000 units of penicillin in saline solution given in divided doses; to produce equal results the mixtures required larger amounts of penicillin than did the saline solution. All patients were followed for twenty-one days, both clinically and bacteriologically. Of 24 failures

9 occurred after the seventh day, and 7 of these were detected by bacteriologic methods alone. These results stress the necessity for a minimal post-treatment observation period of twenty-one days. Sodium and calcium penicillin produced equally satisfactory mixtures. Varying the concentration of beeswax from 4 to 12 per cent did not produce a significant difference in the results. A single intramuscular injection of 1 cc. of a mixture containing 300,000 units of penicillin in 4 to 6 per cent beeswax by volume in peanut oil appears to be a highly satisfactory method of treating acute gonococcic urethritis.

New Orleans Medical and Surgical Journal

98:195-246 (Nov.) 1945

Anoxia Resulting from Methane: Report of Case. R. L. Pullen and W. A. Sodeman.—p. 195.
Missed Labor. V. D'Ingianni and N. J. Tessitore.—p. 197.
Reversible Heart Disease. T. K. Williams Jr.—p. 199.
*Blood Pressure in Coronary Occlusion. T. C. Donald Jr.—p. 209.
Interesting Obstetrical Case Report. C. G. Callender.—p. 214.
Value of Influenza Vaccination. M. Ede.—p. 216.

98:247-306 (Dec.) 1945

Annular Areas of Pulmonary Rarefaction in Children. Eileen Phillips and C. A. Stewart.—p. 247.
Some Principles of Genetics. H. Cummins.—p. 252.
Appraisal of Nutritional Status of Children. A. E. Hansen.—p. 261.
Rheumatic Heart Disease: Study of 167 Cases Among 12,317 Autopsies Performed at the Charity Hospital in New Orleans During Ten Years. I. Uyeda.—p. 271.
Hemolytic Anemia of Newborn (Erythroblastosis Fetalis): Report of Cases. Ruth G. Aleman.—p. 278.
Fatal Mediterranean (Cooley's) Anemia. G. Richarda Williamson and Rena Crawford.—p. 280.
Some Psychologic Hazards in Adoption of Child. M. E. Kirkpatrick.—p. 285.
Hypertrophic Pyloric Stenosis: Analysis of 37 Cases at Charity Hospital. L. J. O'Neil.—p. 287.

Blood Pressure in Coronary Occlusion.—Reports cited by Donald indicate that hypertension is present in from 25 to 75 per cent of patients who have attacks of coronary occlusion. He does not accept hypertension as an etiologic factor, pointing out that there is a discrepancy between the incidence of occlusion and hypertension in the two sexes which is unexplainable. The ratio of coronary occlusion in females and males is about 1 to 4. The ratio of hypertension in females and males is about 3 to 2. The blood pressure probably gives the best indication of the immediate prognosis, low systolic readings and small pulse pressures being most ominous. In the first attack a previous hypertension offers a better immediate prognosis, as the blood pressure is less apt to fall to shock levels. The ultimate prognosis is much worse in persons having hypertension, as the damaged myocardium is incapable of keeping up the output of the heart, and the minute volume is decreased. With the development of a second occlusion the already hypertrophied and greatly damaged myocardium is more prone to develop massive pulmonary edema.

Public Health Reports, Washington, D. C.

60:1415-1446 (Nov. 30) 1945

Tuberculostatic Action of Streptothricin and Streptomycin, with Special Reference to Action of Streptomycin on Chorioallantoic Membrane of Chick Embryo. E. W. Emmart.—p. 1415.
Epidemiologic Significance of Seasonal Variations in Rodent-Ectoparasite Distribution. A. S. Rumreich and J. A. Koepke.—p. 1421.

60:1447-1482 (Dec. 7) 1945

Age Factor in Disabling Morbidity, 1940-1944 Experience in Public Utility Company. W. M. Gafafer and R. Sitgreaves.—p. 1447.
*Dental Caries Experience in Relocated Children Exposed to Water Containing Fluorine: I. Incidence of New Caries After Two Years of Exposure Among Previously Caries Free Permanent Teeth. H. Klein.—p. 1462.

60:1483-1518 (Dec. 14) 1945

Apparent Serologic Heterogeneity Among Strains of Tsutsugamushi Disease (Scrub Typhus). Ida A. Bengtson.—p. 1483.
Epidemic of Severe Pneumonitis in Bayou Region of Louisiana: V. Etiology. B. J. Olson and C. L. Larson.—p. 1488.

Effect of Water Containing Fluorine on Incidence of Dental Caries.—Klein states that in the course of a systematic dental examination of persons of Japanese ancestry residing in War Relocation Authority centers two groups of children at two different centers were examined in the summer of 1943 and again in the summer of 1945. The children relocated in the California center consumed fluoride free water originating from melted snows coming off a precipitous mountain. Analysis of this water revealed a fluorine content of 0.1 part per million, a value within the error of measurement. The children relocated to the Arizona center consumed water originating from two deep wells. This water contained fluorine to the extent of 3 parts per million. During the two year interval 196 children were exposed to fluorine water in the Arizona Relocation Center and 120 consumed fluoride free water in the California center. Analysis of the dental findings obtained in 1943 and in 1945 reveals that a fluorine content of 3 parts per million in the drinking water is associated with a considerable reduction in new caries in teeth present in the mouth and free of caries at the beginning of exposure. These observations are not intended to constitute an endorsement for addition of as much as 3 parts per million of fluorine to community water supplies for the purpose of reducing the incidence of caries. The data provide information that the addition of small amounts of fluorine to community water supplies deficient in this element effects a reduction in the incidence of caries in the erupted permanent teeth of residents of school age and that such caries inhibition is most noticeable in the erupted teeth of the younger children.

Radiology, Syracuse, N. Y.

45:425-558 (Nov.) 1945

Strange Repercussions of Röntgen's Discovery of X-Rays. O. Glasser.—p. 425.
New Kind of Rays. W. C. Röntgen.—p. 428.
Development of Diagnostic X-Ray Apparatus During the First Fifty Years. P. C. Hodges.—p. 438.
Roentgen Ray Tubes. W. D. Coolidge and E. E. Charlton.—p. 449.
Development of Roentgen Diagnosis. L. G. Rigler.—p. 467.
Development of Roentgen Therapy During Fifty Years. G. E. Pfahler.—p. 503.
Roentgen Radiations in Biologic Research. C. Packard.—p. 522.
Modern Physics and Discovery of X-Rays. A. H. Compton.—p. 534.
A Half Century of Roentgen Rays in Industry. G. L. Clark.—p. 539.
Organized Roentgenology in America. A. W. Erskine.—p. 549.
Earliest Roentgen Demonstration of a Pathologic Lesion in America. A. C. Cipollaro.—p. 555.

Surgery, Gynecology and Obstetrics, Chicago

81:593-710 (Dec.) 1945

Segmental Resection of Lesions Occurring in Left Half of Colon with Primary End to End Aseptic Anastomosis: Report Based on 50 Cases. J. M. Waugh and M. D. Custer.—p. 593.
*Penicillin Therapy in Abdominal Surgery: Results of Prophylactic and Therapeutic Use in 50 Cases. G. F. Wollgast.—p. 599.
War Surgery of Abdomen. P. R. Imes.—p. 608.
Gunshot Wounds of Spine: Observations from Evacuation Hospital. J. L. Pool.—p. 617.
*Resection of Lung in Pulmonary Suppurative Diseases: Factors Contributing to Progress. L. M. Carlton and W. E. Adams.—p. 623.
Granulosa Cell Tumor of the Ovary: Clinical and Pathologic Review of 62 Cases. J. E. Hodgson, M. B. Dockerty and R. D. Mussey.—p. 631.
*Congenital Malformations of First Thoracic Rib: Cause of Brachial Neuralgia Which Simulates Cervical Rib Syndrome. J. C. White, M. H. Poppel and R. Adams.—p. 643.
Galvanic Tetanus and Galvanic Tetanus Ratio in Electrodiagnosis of Peripheral Nerve Lesions. L. J. Pollock, J. G. Golseth and A. J. Arieff.—p. 660.
Juxtacervicovesical Fistula. M. Douglass.—p. 667.
Intestinal Intubation in Bowel Obstruction: Technic with New Single Lumen Mercury Weighted Tube. F. I. Harris.—p. 671.
Deformation of Skull in Head Injury: Study with "Stresscoat" Technic. E. S. Gurdjian and H. R. Lissner.—p. 679.
Amputations During the War and After. P. F. Olson.—p. 688.
Penicillin Convulsions: Convulsive Effects of Penicillin Applied to Cerebral Cortex of Monkey and Man. A. E. Walker, H. C. Johnson and J. J. Kollros.—p. 692.

Penicillin Therapy in Abdominal Surgery.—Wollgast observed 5 patients who were critically ill with generalized peritonitis. Treatment with penicillin was started late, and all of these patients died. Later 12 additional patients with peritonitis were treated more adequately. Seven received local treatment and parenteral therapy; 5 received only parenteral therapy. Local administration of penicillin in 3 instances consisted in instilling 50,000 units and in 4 other cases 100,000 units of penicillin into the abdominal cavity just prior to closure. Parenteral therapy was administered intramuscularly at three hour intervals. Dosage was varied from 10,000 units to 20,000 units every three hours, totaling 80,000 to 160,000 units every twenty-four hours. These patients also received all other accepted therapeutic measures. The postoperative course in 10 of these cases was unexpectedly mild. Twenty-five patients with

infected wounds received penicillin both preoperatively and postoperatively as a prophylactic measure. Treatment consisted in parenteral administration of 10,000 of 15,000 units every three hours intramuscularly for an average of three or four days preoperatively. Treatment was continued postoperatively until the patient had been afebrile for at least three or four days. The average duration of treatment was eleven days. The postoperative course of these patients was very gratifying. Definitive operative procedures on contaminated wounds may be carried out earlier and with greater safety when penicillin is administered prophylactically. A man aged 31 was operated on in another hospital for perforated gangrenous appendix. On the ninth day a small incisional abscess was drained. On the eighteenth day his temperature rose to 103 F., with the onset of a septic course with daily elevations between 104 and 105 F. Improvement had not been noted over a seven week period prior to the use of penicillin, but definite improvement followed soon after initiation of this therapy. This serious postoperative complication was cured by penicillin therapy. Seven patients whose wounds became acutely infected following surgery were treated with penicillin. Six of these wounds responded remarkably to treatment.

Resection of Lung in Pulmonary Suppurative Diseases.—Carlton and Adams report observations on 59 patients with suppurative disease of the lung in whom the involved part was resected. Thirty-six of the patients had primary bronchiectasis, 9 had bronchiectasis secondary to bronchial tumors and tuberculosis, 7 had cystic disease of the lung and 7 had chronic nonspecific pulmonary suppuration. Patients with chronic infection of the lung should be hospitalized for three or four days for observation and laboratory examinations before operation. They should receive routine laboratory study. If anemia and hypoproteinemia are present they are corrected by transfusions of whole blood. Stereoscopic roentgenograms of the chest are made. Bronchography, usually by the aspiratory method, is carried out under fluoroscopic control, and all lobes are filled and spot films are made. For operation adequate exposure is essential. The phrenic nerve is then crushed. This decreases the motion of the diaphragm, facilitates the technical procedures and aids in the rapid obliteration of the remaining space following resection. The authors used the tourniquet technic and closure of the bronchial stump with mattress sutures. During the past two years they have used the dissection technic with individual ligation of vessels as worked out and described by Blades and Kent. The four most important factors in the postoperative care are (1) avoidance of anoxia, (2) maintenance of a clear bronchial tree, (3) early expansion of the remaining lung on the operative side and (4) control of infection. Chemotherapy has been a major factor in the prevention of serious postoperative infection. There were 2 deaths in 45 operations made on 36 patients with bronchiectasis, 20 of which were bilateral.

Congenital Malformations of First Thoracic Rib and Cervical Rib Syndrome.—White and his associates report 10 new instances of congenital abnormality of the first thoracic rib. Five of these have come to operation for the relief of specific complaints, while 5 others have remained wholly asymptomatic. First rib malformations generally consist of a rudimentary structure terminating in a synostosis or pseudoarthrosis with the second rib near the scalene tubercle or in a free end in the soft tissues at the base of the neck, which may be connected by a ligamentous band with the manubrium sterni. On rare occasions the first rib may have a joint near its lateral angle before it fuses with the second. Other skeletal abnormalities which are frequently present and cause distortion of the thoracic outlet consist in deformities of the second rib, the upper end of the sternum, scoliosis of the cervicothoracic spine and vertebral anomalies. Symptoms and clinical evidence of abnormal first ribs consist in supraclavicular bony prominence, irritation or paralysis of the brachial plexus and compression of the subclavian vessels as they cross the defective rib. Cervical arthritis, early carcinoma of the thoracic apex and herniation of the lower cervical intervertebral disk must be considered in the differential diagnosis of brachial neuralgia, even in the presence of an anomalous rib. Malformations of the first thoracic rib cannot be differentiated clinically from cervical ribs. They can be accurately diagnosed in an anteroposterior x-ray film which includes all the cervical and uppermost thoracic vertebrae, provided the film is taken with a long exposure and the mandible in motion. A considerable proportion of first rib deformities are large enough to cause mechanical compression of the nerves and vessels at the thoracic outlet. When symptoms are attributable to this condition, conservative orthopedic measures should be tried before surgical intervention. Scalenotomy alone rarely suffices to decompress these structures but must usually be accompanied by radical resection of the rib from a point close to its articulation with the transverse process forward to its attachment to the second rib or where it disappears beneath the clavicle.

Union Médicale du Canada, Montreal

74:1505-1662 (Nov.) 1945

*Abolishing Anginal Pains in Coronary Disease by Pericoronary Neurectomy: Experimental Study. M. Fauteux and O. Swenson.—p. 1518.
Surgical Treatment of Mental Disorders: Prefrontal Lobotomy. F. Charest.—p. 1526.
*Report on Epidemic of Measles: Globulin of (Human) Umbilical Cord Blood: Its Efficacy in Prevention and Attenuation of Measles. R. Foisy and P. M. Larivière.—p. 1535.
Hodgkin's Disease: Study of 30 Cases. P. David.—p. 1542.

Pericoronary Neurectomy in Coronary Disease.—Fauteux and Swenson report two series of experiments on dogs. Sutton and Lueth's method of occlusion of the coronary artery was used in the first series of 10 dogs. In 9 of the animals a positive sensory response was obtained when the coronary artery was temporarily occluded. Pericoronary neurectomy was performed on 10 dogs in the second series of experiments. These dogs were in excellent health at the end of one month. After this interval the ramus descendens of the left coronary artery was ligated. A definite negative sensory response was obtained in 6 of the animals; there was a doubtful affective response in 3, and in only 1 of the 10 animals was a positive sensory response obtained. Pericoronary neurectomy abolishes pain of coronary origin. In addition it has the advantage that destruction of nerve structures vital to other organs can be avoided. The operation does not interfere with cardiac function. Pericoronary neurectomy associated with ligation of the large coronary vein was performed on 1 patient in September 1944 and on another patient in June 1945. Both had attacks of angina pectoris and were unable to work. After the operation the first patient was able to resume his work. This suggests not only that the pain reflexes have been blocked but also that cardiac activity has been improved. The second patient has not yet resumed his work, but he goes up and down the stairs in his house and walks long distances without experiencing discomfort.

Globulin of Human Umbilical Cord Blood in Prevention and Attenuation of Measles.—Foisy and Larivière report an epidemic outbreak of measles which started in an asylum of infants in Montreal on June 24, 1944. Fifty-one of the 300 inmates of the asylum between the ages of 2 and 6 years had measles in 1939 and had acquired active immunity. Sixty-three infants of 249 without active immunity had measles on July 10, 1944, when immunization of the remaining 186 infants was started. Five cc. of globulin of human umbilical cord blood was given to each of these 186 infants. A single anaphylactic reaction occurred, with a general reaction and a temperature of 105 F. for eighteen hours. Measles developed in 42 infants exposed more than five days prior to the immunization. One hundred and forty-four had been exposed less than five days prior to the immunization. Forty-four of them did not develop measles; of the 100 who did, only 3 presented the usual type of the disease, while in 97 the disease was attenuated. In the 44 who did not develop measles, the average acquired passive immunity was of more than a month's duration, since the last case of measles occurred in the asylum on Aug. 3, 1944.

West Virginia Medical Journal, Charleston

41:301-340 (Dec.) 1945

Psychiatry in West Virginia. O. B. Biern.—p. 301.
Psychiatry for General Practitioner: Introduction to Psychiatric Point of View. J. P. Lambert.—p. 302.
Psychiatry and Public Health. J. J. Michaels.—p. 307.
Mental Illness—Public Health Problem. E. F. Reaser.—p. 311.
Common Mechanisms Seen in Functional Disorders. D. C. Cameron.—p. 316.
Is Psychiatry a Medical Luxury? W. Muncie.—p. 320.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine, Liverpool

39:63-136 (Oct.) 1945

Role of Anopheles Pharoensis Theobald in Transmission of Malaria in Kenya Colony. P. C. C. Garnham.—p. 63.
Ocular Lesions in Trypanosomiasis. H. Ridley.—p. 66.
Studies of Biologic Properties of Spirocheta Recurrentis in Ethiopian High Plateau. B. Wolman and M. Wolman.—p. 82.
Modification of Ide Test for Syphilis and Yaws. E. C. Smith, B. G. T. Elmes and J. A. Smith.—p. 94.
Generalized Recurrence in Leishmaniasis (Oriental Sore): Report of Case with 110 Lesions. A. Dostrovsky and F. Sagher.—p. 98.
*Effect of Urine on Endameba Histolytica. J. W. Watson.—p. 101.
Investigations in Chemotherapy of Malaria in West Africa: IV. Report on Case of Acute Quinacrine Poisoning. J. L. Markson and J. Dawson.—p. 117.
Observations on Filaria, Foleyella Leiperi (Railliet, 1916) of North American Leopard Frog. S. G. Cowper.—p. 119.
Morphology of Pharyngeal Armature in Anopheles Gambiae and Anopheles Gambiae Var. Melas from Southern Nigeria. L. J. Chwatt.—p. 124.
*Prolonged Oral Administration of Quinacrine: I. The Effects on Tests of Organ Function. B. G. Maegraith.—p. 128.
*Prolonged Oral Administration of Quinacrine: II. Hematologic Effect. B. G. Maegraith.—p. 133.

Effect of Urine on Endameba Histolytica.—Watson and his associates report experiments which demonstrate that at the temperature of the human body urine is lethal to Endameba histolytica. This ameba is unable to live and multiply in urine unless it is diluted to nearly one tenth of its normal concentration. The effect of urine is produced slowly, beginning to be perceptible only after about two hours' exposure. After twenty-four hours the great majority of the amebas have become degenerate and unrecognizable. The toxicity of urine is partly explained by the effects of acidity, of osmotic pressure and of urea and ammonia in the urine. It seems highly improbable that E. histolytica can establish itself in any part of the urinary tract where it will be continually immersed in urine, even as dilute as that in the kidney tubules. Hence amebas which gain entrance to the kidney, the ureter, the bladder or the urethra (by direct introduction of the organisms into the urethral aperture, by fistulous extension of a rectal ulcer or by bursting of a liver abscess) will probably succumb to the lethal effect of the urine. Since, however, the amebas retain their motility for upward of two hours, it is possible for some to penetrate the tissue forming the walls of these organs, where, protected from the urine, they can multiply and produce lesions. Any condition of the host in which the composition of the urine is abnormal, showing low osmotic pressure or low ammonia and urea content, or in which preexisting disease has destroyed part of the protective epithelium lining of the urinary tract, would facilitate the penetration and establishment of E. histolytica in the tissues. Probably, once amebic lesions had been established, amebas would periodically emerge into the cavity of the urinary tract and be swept out in the urine during micturition and be found in the urine.

Prolonged Administration of Quinacrine.—The experimental subjects were 43 healthy men, Oxford undergraduates and soldier volunteers who had not taken quinacrine previously. Approximately 0.1 Gm. of quinacrine daily was given over a period of nine to twelve months. Tests of liver and kidney function were made and compared with tests done before the administration of quinacrine. Evidence indicated that this course of quinacrine did not impair the efficiency of the liver or the kidney.

Hematologic Effect of Prolonged Use of Quinacrine.—Sixty-five women and 30 men were given quinacrine in a dosage of 0.4 to 0.7 Gm. weekly for four to ten months. During this period there was not a significant change in the red cell count, the white cell count, the hematocrit or the erythrocyte sedimentation rate. A small rise in hemoglobin concentration occurred in the men in both experimental and control groups.

British Journal of Dermatology and Syphilis, London

57:169-196 (Sept.-Oct.) 1945

Dermatitis Due to a Case Hardening Compound. G. P. B. Whitwell.—p. 169.
Solitary Neurofibroma of Scalp. E. L. Cohen.—p. 172.

British Journal of Industrial Medicine, London

2:125-182 (July) 1945

Health and Environmental Conditions in Iron Foundry. G. F. Keatinge and N. M. Potter.—p. 125.
Trichlorethylene: Absorption, Elimination and Metabolism. Joan F. Powell.—p. 142.
Added Infection in Industrial Wounds. Barbara Clayton-Cooper and R. E. O. Williams.—p. 146.
Hot Humid Environment: Its Effect on Performance of Motor Coordination Test. J. S. Weiner and J. C. D. Hutchinson.—p. 154.

British Journal of Radiology, London

18:335-368 (Nov.) 1945

Radiologic Aspects of Intracranial Pneumocephalus. D. C. Eaglesham.—p. 335.
Quantity and Quality of Radiations Scattered Within a Medium Irradiated by High Voltage Radiation. C. W. Wilson.—p. 344.
*Gaucher's Disease—Early Radiologic Diagnosis. W. Tennent.—p. 356.
Bone Destruction in Cases of Carcinoma of Uterus. D. W. Smithers and R. D. S. Rhys-Lewis.—p. 359.
Pulmonary Metastases from Tumors of Testis Simulating Hydatid Cysts Radiologically. L. M. Shorvon.—p. 363.

Gaucher's Disease: Radiologic Diagnosis.—Tennent presents the history of a girl, aged 11, who had an enlarged liver and spleen. X-ray examination revealed slight expansion of the lower femoral diaphyses, with cortical thinning and generalized osteoporosis. Following splenectomy, the patient made an uninterrupted recovery. Sections of the spleen showed the splenic sinusoids distended with the so-called Gaucher's cells. The whole skeleton was examined but, as anticipated, significant changes were not found in any bones except the femurs. The disease was of the visceral type, with slight anemia and few bone changes. The lower ends of both femurs showed about the earliest stage at which roentgenologic diagnosis of Gaucher's disease can be made. Without information of splenomegaly the film might have been passed over, but, if comparison is made with a normal child of the same age, certain diagnostic points may be elicited. First there is general osteoporosis, which increases in degree from above downward. Secondly there is expansion of the lower ends of the bones, mainly manifested on the medial aspects of the femurs, and, while there is a true overall increase in the breadth, the lateral wall takes little part in this increase during the earliest stage of the disease. Thirdly there is cortical thinning and small medullary areas of erosion of the trabeculae. The cortical thinning starts in the midshaft and again is largely confined to the medial wall. In early cases the chief danger is that it may be mistaken for an osteomyelitis and the bone needlessly drained.

British Journal of Tuberculosis, London

39:77-108 (Oct.) 1945

Prognosis of Chronic Miliary Tuberculosis in Children. R. B. Illing.—p. 79.
Syphilis of Lung in Bantus. B. A. Dormer, J. Friedlander and F. J. Wiles.—p. 85.
*Etiology of Silicosis. L. W. Hale.—p. 91.

Etiology of Silicosis.—Conditions such as chronic sinusitis with postnasal drip, or repeated catarrhal bronchial infections, which temporarily or permanently destroy cilia, predispose to silicosis. Dust which has entered the bronchioles and the alveoli is not in contact with ciliated epithelium and depends on the pulmonary phagocytes and the lymph vessels for its removal. Any disease process (e. g. pneumonia) which affects the alveolar wall, the lymph vessels or the lymphoid aggregations will, by producing scarring in these delicate structures, impair their function of carrying foreign matter to the lymph nodes and will thus predispose to silicosis. In the phagocyte containing ingested silica changes closely resembling those seen in a tubercle appear. The cell enlarges, the cytoplasm increases, lipoid droplets are distinguishable in the cytoplasm and later the nucleus may divide repeatedly, resulting in the formation of a typical Langhans giant cell. Some of the phagocytes, in passing through these stages, appear to become "mummified" and their nuclear structure ceases to take stains, but the cell envelop may not disintegrate for a long time and the silica particles remain within it. The essential feature of the silicotic process is an excessive fibrosis in the intrapulmonary lymphoid aggregations, together with a fibrosis of the perilymphatic connective tissue and a hyaline modification of the fibrous tissue due to the specific effect

of silica. The nodules so formed impede the flow of lymph. The nodules are tough, even hard, and contain gritty feeling foci. There is a zone of black surrounding them owing to the presence of carbon particles trapped among the fibrous tissue. Both the rate and the extent of fibrosis are in inverse proportion to the size of the silica particle, those between 0.5 and 1 micron being most reactive; particles above 10 microns cause a standard degree of fibrosis without tendency to progression. Particles smaller than 0.002 micron were not retained in the tissues, caused little reaction and were excreted in the urine. While pulmonary tuberculosis is among those respiratory conditions which predispose to silicosis, silicosis renders a man more vulnerable to tuberculosis. Even with modern hygienic conditions, 75 per cent of silicotic patients die of pulmonary tuberculosis.

British Medical Journal, London

2:635-676 (Nov. 10) 1945

Use of Micro-Organisms for Therapeutic Purposes. H. W. Florey. —p. 635.
*Neurologic Complications of Infective Hepatitis. J. F. Stokes, J. R. Owen and E. G. Holmes.—p. 642.
Trick Test to Detect Night Blindness "Malingerers." E. Epstein and S. A. H. Lesser.—p. 644.
General Anesthesia and Temperature of Inhaled Gases. A. Mills and Margaret Soutar.—p. 646.
Foreign Bodies in Bronchi and Esophagus in Children. M. L. Abercromby.—p. 647.
Unusual Case of Erythroblastosis Fetalis. E. F. Aubert, J. B. Cochrane and M. E. Ellis.—p. 648.
Tuberculosis Among Prisoners of War in Germany. A. L. Cochrane. —p. 656.

2:677-714 (Nov. 17) 1945

Therapeutic Effect of Induced Jaundice in Rheumatoid Arthritis. Frances Gardner, Alice Stewart and F. O. MacCallum.—p. 677.
Acute Nonspecific Mesenteric Lymphadenitis. I. Aird.—p. 680.
Diets of School Children in Two Industrial Towns. E. R. Bransby and Gertrude Wagner.—p. 682.
Report on Nearthrosis of Shaft of Humerus for Amputations Round the Elbow Joint. L. Gillis.—p. 686.
Agranulocytosis After Sulfonamide Sensitization: Penicillin Therapy: Death from Pseudomonas Pyocyanea Septicemia. J. D. Cameron and J. R. Edge.—p. 688.
Acute Yellow Necrosis of Liver Following Trilene Anesthesia. K. N. Herdman.—p. 689.
Study of Neurosis Among Repatriated Prisoners of War. W. H. Whiles. —p. 697.

Neurologic Complications of Infective Hepatitis.—Stokes and his associates classify less well recognized neurologic findings in infective hepatitis and separate them into four main groups. First, the picture commonly found in the fatal case. Second, a symptom complex comprising generalized or localized muscular rigidity with increased tendon jerks, sometimes but not invariably associated with extensor plantar responses; in addition choreiform movements have been observed, and in 1 case a parkinsonian tremor. Third, a group of cases with large focal hemorrhages into nervous tissue, which may or may not produce localizing signs. Fourth, those cases showing signs of peripheral neuritis in which there is good evidence for direct relation to the onset of infective hepatitis.

2:715-754 (Nov. 24) 1945

Survey of Fungous Diseases in Great Britain: Results from First Eighteen Months. J. T. Duncan.—p. 715.
Treatment of Acute Appendicitis: Study of 480 Consecutive Cases. A. Lyall.—p. 719.
Heavy Nupercaine Spinal Analgesia in Operative Obstetrics, with Report of 394 Cases. L. Resnick.—p. 722.
Bladder Neck Obstruction Due to Nonmalignant Disease of Prostate. H. H. Stewart.—p. 724.
Paradoxical Embolism, with Report of Case Due to Ventricular Septum Defect. C. A. Birch.—p. 727.
*Actinomycosis Successfully Treated with Penicillin: Report of 2 Cases. A. J. C. Hamilton and H. J. R. Kirkpatrick.—p. 728.

Actinomycosis Successfully Treated with Penicillin.—Hamilton and Kirkpatrick present 2 cases of cervicofacial actinomycosis. The first concerned a linotype operator aged 35 and the second a railway porter aged 15. In both cases penicillin was administered systemically by intramuscular injection. During the first half of the course of treatment the dose was 33,000 units every three hours; thereafter the dose was reduced to 25,000 units every three hours. There was a gradual diminution in the size of the lesion. Treatment was continued until the discharge had ceased and the lesions had greatly diminished in size. The first patient received in all 5,800,000 units of penicillin and the second patient 5,200,000 units. A month after discharge from the hospital there was slight thickening of the tissues at the site of the lesion, but evidence of an active inflammatory process was not present. The results obtained demonstrated the curative effect of penicillin, but more prolonged observation of the patients will be required to establish that viable Actinomyces capable of proliferation does not remain embedded in the tissues. According to examinations carried out by Garrod, different strains of Actinomyces differ in their susceptibility to penicillin. Whereas two strains showed approximately the same degree of sensitivity as the standard staphylococcus, a third strain was eight times as resistant, a fourth strain was four times as resistant and a fifth strain grew sparsely and atypically in sixteen times the concentration of penicillin tolerated by the staphylococcus.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

52:417-544 (Oct.) 1945

Behavior of Fetus in Utero, with Special Reference to Incidence of Breech Presentation at Term. C. K. Vartan.—p. 417.
Body Temperature—Diagnostic Aid in Menstrual Disorders and Sterility. H. E. Nieburgs.—p. 435.
*Association of Erythroblastosis Fetalis and Accidental Antepartum Hemorrhage. A. E. Burch.—p. 463.
Morphologic Study on Chorioepithelial Proliferations (Based on 10 Cases). W. A. Laqueur.—p. 468.
*Effect of Postoperative Exercises and Massage on Incidence of Pulmonary Embolism at Chelsea Hospital for Women. J. P. Erskine and I. C. Shires.—p. 480.
Short Study of Histaminase Activity During Pregnancy. E. W. Koloszynski.—p. 486.
Acute Hydraminos: Brief Survey of Recent Literature, with Report of Case Simulating Concealed Accidental Hemorrhage. D. T. O'Driscoll. —p. 496.
Treatment with Penicillin of Some Obstetric Cases. J. R. E. James. —p. 501.
Case of Meigs's Syndrome. N. Erez.—p. 506.
Carcinoma of Female Urethra: Review of Literature and Report of 3 Cases. S. G. Clayton.—p. 508.

Erythroblastosis Fetalis and Antepartum Hemorrhage.—Burch and Allot investigated all cases of antepartum hemorrhage occurring at St. Alfege's Hospital between February and June 1945. It was found that 5 of 10 of the mothers who had antepartum hemorrhage were Rh negative with Rh positive husbands and 3 of these had anti-Rh agglutinins. Of the 3 who were delivered soon after the antepartum hemorrhage, 1 had a child with only a moderate degree of jaundice who recovered without transfusion, another a child with gross hydrops and the third a child stillborn, possibly as a result of the course of labor. In the 2 mothers who were not delivered until some weeks after the first hemorrhage the fetus was stillborn, macerated and of a size corresponding roughly with death at the time of onset of the bleeding. The author concludes that a woman in whom isoimmunization can occur is prone to accidental antepartum hemorrhage, and the ensuing placental damage may be a factor in transmission of antigen and agglutinin.

Effect of Postoperative Exercises and Massage on Pulmonary Embolism.—At the beginning of 1937 a massage department was established at the Chelsea Hospital for Women. The members of the massage team were to instruct and supervise postoperative exercises and to carry out massage in all cases after abdominal operations and operations for the repair of genital prolapse. The incidence of fatal embolism decreased by more than 50 per cent during the seven year period subsequent to the introduction of the massage and exercise procedure.

Lancet, London

2:585-620 (Nov. 10) 1945

Pitfalls of Tropical Surgery. W. H. Ogilvie.—p. 585.
Psychiatric Experiences of General Physician in Malta, 1941, 1943. R. E. Tunbridge.—p. 587.
Sore Nipples: Causes and Prevention. M. Gunther.—p. 590.
*Infective Hepatitis: Transmission by Feces and Urine. G. M. Findlay and R. R. Willcox.—p. 594.
Trichlorethylene as General Anesthetic in Dental Surgery: Report Based on 2,000 Cases. A. H. Galley.—p. 597.
Postscarlatinal Encephalitis: Report of Case. R. S. Illingworth.—p. 600.

Transmission of Infective Hepatitis.—Findlay and Willcox describe their studies on transmission of infective hepatitis by administration of feces and urine from spontaneous and experimental cases. Of 99 recipients of possibly infected material, feces or urine, 24 are regarded as having given a positive

response: 12 with definite icterus and the symptoms of infective hepatitis, 12 with subicterus but with biochemical changes in urine and blood and slight symptoms. Of the primary inoculations which were positive 12 had definite icterus and 4 were subicteric; of the 8 positive second passages all were subicteric. If the persons receiving neoarsphenamine are discarded there are 18 positives, but it is not considered that the injections of neoarsphenamine were alone responsible for these 6 positives. The explanation for this comparatively low proportion of positives might be destruction of the causal agent by the gastric juice or preexisting immunity. The immunity induced by one attack of infective hepatitis is probably considerable in view of the small number of true second attacks. Since subicteric cases undoubtedly occur during outbreaks of infective hepatitis, the chances of exposure to virus and thus the possibility of acquiring immunity must be considerable among the general population. It would seem probable that the virus of infective hepatitis has two possible ports of entry: through the nasopharynx as a droplet infection and through the alimentary canal as the result of contamination of food by infected feces or urine.

2:621-656 (Nov. 17) 1945

Tuberculosis in Childhood. A. Moncrieff.—p. 621.
Primary Tuberculosis in Children Causing Long Illness. J. V. Hurford. —p. 624.
Preicteric State of Infective Hepatitis: Value of Biochemical Findings in Diagnosis. M. R. Pollock.—p. 626.
Relapsing Fever with Nephritis and Subarachnoid Hemorrhage. H. A. Dewar and R. Walmsley.—p. 630.
Early Treatment of Wounds of Knee Joint. P. H. Newman.—p. 632.
*Staphylococcic Leptomeningitis Treated with Intracisternal Penicillin. L. H. Worth.—p. 634.

2:657-692 (Nov. 24) 1945

Rheumatic Fever and Heart Disease: Harveian Oration. J. Parkinson. —p. 657.
Waking Temperature in Relation to Female Fecundity. Mary Barton and B. P. Wiesner.—p. 663.
Ovarian Function and Body Temperature. I. Halbrecht.—p. 668.
Infections of Superficial Palmar Space. P. M. Birks.—p. 669.
Treatment of Epididymitis. S. M. Laird.—p. 670.

Intracisternal Penicillin in Staphylococcic Leptomeningitis.—The case of staphylococcic leptomeningitis described by Worth developed in a man with osteomyelitis of the spine following diagnostic lumbar puncture. The situation was desperate, and radical laminectomy, with removal of all dead bone, was required together with intracisternal penicillin, the only route available owing to the lumbar sepsis. Cisternal puncture produced turbid cerebrospinal fluid, and many staphylococci were seen in a direct film. Fifty thousand units of penicillin was given intracisternally and 30,000 units intramuscularly every three hours. Intramuscular penicillin and daily cisternal punctures with intracisternal instillation of penicillin were continued for a week. Interruption of the treatment for a single day produced an immediate unfavorable change in the clinical picture. Further intracisternal penicillin in doses of 50,000 and 30,000 units rapidly controlled the condition. The intracisternal injection of these large doses did not produce severe reactions.

2:693-728 (Dec. 1) 1945

Retropubic Prostatectomy: New Extravesical Technic: Report of 20 Cases. T. Millin.—p. 693.
Ambulatory Treatment of Early Syphilis with Penicillin: Rationale, Experimental Basis and Preliminary Results. E. M. Lourie, H. O. J. Collier, A. O. F. Ross, D. T. Robinson, R. B. Nelson and D. T. Robinson.—p. 696.
*Effect of Large Doses of Alkali on Kidney Function. Army Malaria Research Unit.—p. 701.
Effect of Penicillin on Bacillus Proteus. G. T. Stewart.—p. 705.
*Acute Brachial Radiculitis. G. J. Dixon and T. B. S. Dick.—p. 707.
*Extensive Interstitial Calcinosis with Osteoporosis and Scleroderma-Dermatomyositis. B. C. Medvei.—p. 708.

Effect of Large Doses of Alkali on Kidney Function.—A Malaria Research Unit studied in normal subjects the effects of intensive alkali treatment. These investigations assert that intensive alkali therapy of this kind is accompanied by dangers, and its efficacy is open to question. Three men were given 60 grains (4 Gm.) of sodium bicarbonate and 60 grains of sodium citrate every two hours. One subject received this course for one day, 2 subjects for three days. All the subjects on alkali had disturbances of renal function. In 1, on the alkali course for three days, this was severe and led to a threefold increase in blood urea. All the subjects on alkali developed fairly intense alkalosis, not entirely compensated, together with sodium and water retention. There was dilution of the blood by about 10 per cent. Both persons on alkali for three days complained of symptoms. A fourth subject was given an equivalent amount of sodium chloride for twenty-four hours. He showed a slight degree of sodium and water retention without alteration of renal function. Large doses of alkali should not be administered in conditions in which renal failure may supervene.

Acute Brachial Radiculitis.—Dixon and Dick's report is based on a detailed study of 16 typical cases of brachial radiculitis. It invariably starts with some pain in the root of the neck and shoulder region. Usually the pain is very severe, and often it complicates the course of an acute infectious fever or the convalescence from a surgical operation. Palsy is often not noticed for several days, in fact not until the pain begins to abate; then the patient usually finds he is unable to lift his arm. Muscular wasting follows and is usually extensive at the end of fourteen days. An area of sensory loss, although not complained of by the patient, is usually found over the deltoid muscle. The authors have excluded cases in which wasting and weakness was not well defined in the muscles of the shoulder girdle and trauma or injection of foreign serum appeared to be the precipitating cause. The authors followed the course of 16 patients over a considerable period. Neither fitting with abduction splints nor treatment with vitamin B_1 appeared to alter the course of the disease. Ten patients have shown complete functional recovery after eight to eighteen months. One was so far recovered at the end of five months that he returned to duty, a second with complete recovery on one side is recovering from a relapse on the other side and a third is still showing slow recovery at the end of two years. Of 3 cases that have been stationary or are deteriorating, 1 shows very little disability, the diagnosis in a second is doubtful, and only the third presents a severe residual disability. Recurrences developed in 5 cases, 2 at the end of six weeks, 2 at six months and 1 at the end of five years.

Extensive Interstitial Calcinosis.—Medvei reports a case in which extensive interstitial calcinosis was associated with diffuse osteoporosis, dermatomyositis and scleroderma in a woman aged 32. The calcification made the patient look as if she was covered with armor plating. Fundamental derangement in the calcium and phosphorus metabolism could not be shown chemically. Focal oral infection was present. Reduction of the parathyroid tissue by operation did not improve the patient's condition. The microscopic appearance of a piece of excised muscle, the eosinophilia, the excessive erythrocyte sedimentation rate and the oral infection all point to an inflammatory process in the muscles and, with the edema and the skin lesion, complete the picture of a case belonging to the dermatomyositis-scleroderma group of Dowling and Griffiths.

Medical Journal of Australia, Sydney

2:325-352 (Sept. 15) 1945

Blood Groups, Subgroups, M, N Types and Rh Subtypes in Filipinos. R. T. Simmons and J. J. Graydon.—p. 325.
Anticoagulant Effect of Perfusing Organs: Liver, Kidney and Lung. E. R. Trethewie.—p. 328.
Can Epilepsy Be Cured? Results of Treatment. N. V. Youngman. —p. 332.
Note on Incubation Period of Scrub Typhus and Its Correlation with Clinical Severity. R. Andrew.—p. 335.
Method of Continuous Intramuscular Infusion of Penicillin Solutions. J. Loewenthal.—p. 336.

New Zealand Medical Journal, Wellington

44:219-294 (Oct.) 1945

Sequelae of Diseases Contracted in Middle East. J. R. Boyd.—p. 222.
Diagnosis and Treatment of Chronic Amebiasis. J. D. Cottrell and J. J. G. Peddie.—p. 230.
*Middle Meningeal Hemorrhage. R. Orgias.—p. 242.
Skin and the Solomons. J. W. E. Raine.—p. 249.
Application of Stretch Reflex to Identification of Lesion of Upper Motor Neuron. I. M. Allen.—p. 257.
Mastoidectomy Simplified. E. L. Marchant.—p. 268.

Middle Meningeal Hemorrhage.—Orgias describes 7 cases of middle meningeal hemorrhage which were encountered among 1,529 cases of head injury. Of the 67 deaths from head injury, 3 were due to middle meningeal hemorrhage. A detailed inquiry

into the circumstances of the accident and the condition of the patient are of great importance for a correct diagnosis. The most useful sign has been coma or a deepening coma or a drift into unconsciousness. The pupil has been dilated or has become dilated on the affected side in all these cases. The reaction to light was variable, usually depressed or absent. The pulse rate was between 50 and 60 and full. The blood pressure was moderately elevated. There was usually some increase in tone of the limbs or loss of movement on the contralateral side. An inspection of the head with palpation is important, as this may reveal bruising or edema on the side of the lesion. There is usually a fracture across the line of the middle meningeal artery. In certain instances without a history the diagnosis can only be suspected and an exploratory trephine is necessary. Operation should not be delayed. None of the patients showed a dramatic return of consciousness. Therefore efforts had to be directed toward preventing pulmonary complications and maintaining nutrition. The foot of the bed was raised and the patient nursed on the side and rolled to the opposite side hourly. A special nurse kept the airway clear with suction. Three pints of nutrient fluid of 1,500 calories was given by stomach tube daily. The hemoglobin was returned to normal as soon as possible by blood transfusion to ensure adequate oxygenation of the brain. Sulfadiazine 4 Gm. daily given by stomach tube helped to control pulmonary infection. All patients were given ½ grain (32 mg.) of phenobarbital twice daily for several months in the hope that traumatic epilepsy could be avoided.

Proceedings of Royal Society of Medicine, London

38:663-706 (Oct.) 1945. **Partial Index**

Discussion on Exophthalmos and Endocrine Disturbance. W. R. Brain and others.—p. 666.
Discussion on Biochemistry and Psychiatry. G. D. Greville and others.—p. 671.
Late Results of Albee Fixation of Tuberculosis of Spine. D. M. Aitken.—p. 685.
Discussion on Management of Permanent Colostomy. W. E. Miles and others.—p. 691.
Wilhelm Conrad Röntgen (1845-1923) and Early Development of Radiology. E. A. Underwood.—p. 697.

South African J. Medical Sciences, Johannesburg

10:67-108 (Sept.) 1945

Vitamin A and Porphyrin-like Fluorescence in Livers of Pellagrins, with Special Reference to Effects of High Carbohydrate Diet and Methionine. J. Gillman, T. Gillman and S. Brenner.—p. 67.
Survey of Vitamins in African Foodstuffs: IV. Thiamine Content of Beans and Other Legumes. L. Golberg, J. M. Thorp and Sheila Sussman.—p. 87.
*Importance of Standardizing Oxygen Content of Blood in Hematocrit Determinations. L. Berk.—p. 95.
Simple Qualitative Test for Erythrocyte Fragility. L. Berk.—p. 99.
Growth Patterns as Secondary Sex Characteristics. E. H. Cluver and E. Jokl.—p. 105.

Oxygen Content of Blood and Hematocrit Determination.—Berk shows that differences in the oxygen content of samples of venous blood may alter the hematocrit by as much as 3 per cent. This disturbance affects the mean corpuscular hemoglobin concentration figure by up to 3 per cent and the mean corpuscular volume figure up to 18 cubic microns. It is suggested therefore that all samples of blood should be standardized by bringing them into gaseous equilibrium with the atmosphere before the performance of a hematocrit determination.

Transactions Roy. Soc. Trop. Med. and Hyg., London

39:91-176 (Oct.) 1945

Late Results of Treatment of Sleeping Sickness in Sierra Leone by Antrypol Tryparsamide Pentamidine and Propamidine Singly and in Various Combinations. R. D. Harding.—p. 99.
Leprosy of Large Intestine and Gallbladder: Case Report, with Review of Literature. C. E. Taylor.—p. 125.
Chemotherapy of Experimental Leishmaniasis: II. Dose Response Curve for Activity of Sodium Stibogluconate. L. G. Goodwin.—p. 133.
Investigation on New Repellents for Protection of Man Against Mosquito Attacks. D. Blagoveschensky, N. Bregetova and A. Monchadsky.—p. 147.
Identity of Ciliate Balantidium Minutum, Alleged Parasite of Man. J. W. Watson.—p. 151.
Observations on Coprophilic Habits of Ciliate Balantiophorus Minutus Schewiakoff. J. M. Watson.—p. 161.
Types of Eberthella Typhosa in Palestine. L. Olitzki, Z. Olitzki and M. Shelubsky.—p 167.

Chinese Medical Journal, Washington, D. C.

62:305-404 (Oct.-Dec.) 1944. **Partial Index**

Comparison of Basal Metabolism of Chinese in Szechuen During Sleeping and Walking States. D. F. Pen and L. G. Kilborn.—p. 305.
Malaria Incidence in Two Districts in Western Chekiang, China. H. C. Kan.—p. 311.
Attempts to Recover Typhus Rickettsia from Patients Afflicted with Thromboangiitis Obliterans. W. T. Liu.—p. 320.
*Susceptibility of Phthirus Pubis to Infection with Typhus Virus. H. L. Chung.—p. 331.
Studies on Typhus Fever Epidemic Occurring in a Poor House: II. Etiologic and Epidemiologic Studies. K. H. Pang.—p. 334.
Id.: III. Control Measures, with Special Reference to Use of Typhus Vaccine. K. H. Pang, S. H. Zia, S. M. Chen and Y. S. Feng.—p. 347.
Blood Transfusion: Review of 188 Transfusions in 165 Cases. C. M. Lee and J. S. Pan.—p. 351.
Bisulfite Binding Substances in Human Blood. W. N. Bien.—p. 358.
Amebic Colitis, with Special Reference to Perforation: Study of 20 Autopsied Cases. C. C. Tan and Y. Liu.—p. 366.

Susceptibility of Phthirus Pubis to Infection with Typhus.—Chung fed three batches of laboratory bred pubic lice on 3 typhus fever patients for from seven to nine days during the height of the disease. These pubic lice were found to be infectious, as demonstrated by guinea pig inoculations. The inoculated guinea pigs showed typical febrile reactions and not infrequently also scrotal swelling. Rickettsia prowazeki was demonstrable in scrapings as well as in tissue cultures of the inflamed tunica and in the intestine of body lice inoculated rectally with the brain emulsion of infected guinea pigs. The positive feeding experiments reported here suggest that under certain circumstances the pubic louse may act as a transmitter of typhus.

Progrès Médical, Paris

73:275-304 (Sept. 10-24) 1945. **Partial Index**

Hypoalimentation and Hyporesistance to Alcohol and to Tobacco. L. Binet and R. Crosnier.—p. 275.
*Edematous Gastritis. M. Loeper.—p. 277.
Treatment of Anemia with Iron Preparations. J. Mallarmé.—p. 279.
*Treatment of Hemophilia with Dioxydiethylstilbestrol (Stilbestrol). P. Chassagne.—p. 282.

Edematous Gastritis.—Edematous gastritis may be associated with severe anemia, cachexia, certain neoplasms and ulcers, but it may also occur as an autonomous disease. It often alternates with urticaria and seems to be an internal manifestation of urticaria. Clinically the edematous gastritis may be absolutely latent. It is manifested by indigestion and discomfort, by pain and by heartburn. Gastroscopy assists in the diagnosis. There may be present an edematous swelling of the mucosa with a pale central zone and a darker periphery; the edema may be present on the lesser curvature, the anterior pillar, the fornix or the pillars of the antral sphincter, but the pylorus is not frequently involved. There may be small erosions on an edematous base, some mucus and a few eosinophils. The duration of the edematous gastritis may be from two to eight days. In the great majority of the cases the condition is caused by the ingestion of certain foods, particularly of mollusks, crustacea, fish and sausage. Histamine frequently is the immediate cause. A specific predisposition is to be considered. With certain patients it consists in a preliminary atrophy of the mucosa, in vagotonic persons it consists of hypomyxia and hypoleukocytosis and in still others the predisposition consists in hyperergy close to anaphylaxis. Treatment consists of a strict diet and administration of bismuth and charcoal. Atropine may favor leukopedesis and myxorrhea and may act as an antianaphylactin. Desensitization may be effected by the administration of peptone and pepsin prior to meals.

Diethylstilbestrol Treatment of Hemophilia.—Intramuscular injections of 0.5 to 1.0 mg. of diethylstilbestrol in oil every day for five days were effective in restoring the coagulation time to approximately normal levels. The same effect may be produced by the oral administration of a 5 mg. tablet three times a week. Chassagne suggests large doses of the drug during hemorrhagic periods. Five to 10 mg. should be administered by mouth every day for one week, or 1 to 5 mg. should be given intramuscularly every day during this period. Several days are required to obtain an improvement in the coagulation time. Apart from the hemorrhagic periods, a prolonged treat-

ment is required. This should consist of oral administration of 1 to 3 mg. of the drug every day or every second day for several weeks. Pigmentation of the genitals following administration of the drug was observed in adults and in adolescents.

73:307-320 (Oct. 10) 1945. Partial Index

Tuberculosis of Eyes. P. Bailliart.—p. 307.
Fatal Diphtheria on the Hundredth Day of Onset: Cellular Lesions of Dorsal Nucleus of Vagus. J. S. Bourdin.—p. 309.
*Nature of Icterus Due to Administration of Arsphenamine Compounds to the Syphilitic. J. Marshall.—p. 310.
Fetal Erythroblastosis and Rhesus Factor. R. André.—p. 311.
Intermammary Pruritus and Pruritus of Legs. M. Pignot.—p. 312.

Icterus Due to Arsphenamine Compounds.—Marshall reports clinical observations of postarsphenamine jaundice in syphilitic patients in England during the period 1941 to 1944. From 1941 to 1943 treatment of syphilis consisted of four series of injections with neoarsphenamine and preparations of bismuth; each series consisted of ten injections of 0.6 Gm. of neoarsphenamine and ten injections of 0.20 Gm. of a bismuth compound at the rate of one of each weekly. There was a rest interval of one month after each of the series. Fifty per cent of the syphilitic patients to whom this treatment was given developed jaundice, the majority on about the hundredth day after the first injection. In 1944 a rapid twenty day treatment with oxophenarsine hydrochloride and bismuth or penicillin was instituted. Jaundice likewise occurred on the hundredth day after this treatment. Postarsphenamine jaundice is clinically indistinguishable from infective hepatitis, significant biochemical difference between the two has not been demonstrated, and pathologically it has been shown by liver biopsy that changes in the liver are similar in the two conditions. Postarsphenamine jaundice is probably spread by infected syringes. By boiling the syringes before and after injections the percentage of icterus was reduced from 50 to 10. Each of 10 patients was given a special new syringe for individual use boiled before and after injection. There was not a single instance of jaundice among these patients up to the hundred and fiftieth day of the treatment, but 1 of the 10 developed jaundice on the eighty-third day after he had received one injection at another hospital. Methionine and cystine were given by mouth to some of the patients on neoarsphenamine treatment. These amino acids were administered for a period of three to six weeks, beginning one week prior to the hundredth day of the arsenic treatment. While 50 per cent of the control patients developed jaundice on the hundredth day of the neoarsphenamine treatment, the percentage of jaundice among those treated with methionine was considerably reduced and in those in whom it occurred it did so not on the hundredth day but much later. The mode of action of the methionine is not known.

Practica Oto-Rhino-Laryngologica, Basel

7:97-152 (No. 2) 1945. Partial Index

*Clinical Symptomatology of Bronchial Adenoma. F. R. Nager.—p. 102.
Focal Infection Due to Salivary Stone with Chronic Inflammation of Submaxillary Salivary Gland. A. Weder.—p. 134.
Central Paralysis of Superior Laryngeal Nerve. R. Luchsinger.—p. 139.

Bronchial Adenoma.—Nager reports 7 cases of bronchial adenoma. Three patients presented primary symptoms of the disease at the beginning of the third decade of their life, 2 patients did so in the course of the third decade and only 2 patients were over 40 years of age. There were 4 female and 3 male patients. Disturbances of respiration and pulmonary symptoms depend on a considerable increase in the size of the tumor and suggest that the beginning of the tumor may be traced to the end of puberty, since as a rule bronchial adenoma grows slowly. In the patients in the third decade of life the course of the disease seemed to be more rapid. Spontaneous hemoptysis occurs when the vascular tumor has infiltrated the mucosa and reached the thin epithelial layer. The first stage of bronchial adenoma, which is characterized by asthmatoid wheezing and by hemoptysis, was presented by 2 of the author's patients. The second stage, which is characterized by the symptoms of bronchial stenosis and its sequels such as atelectasis, was presented by 2 patients, and the third and fatal stage, characterized by suppurative disintegration of tissues such as empyema or gangrene of the lung, was present in 2. A favorable prognosis of the benign bronchial adenoma depends primarily on early diagnosis. The prognosis is unfavorable in late cases. Bronchoscopy is essential for early diagnosis. In the last three years it has been performed in 300 cases at Nager's clinic in Zurich without any untoward reaction. Improved or normal conditions in the lumen of the bronchi resulted in the early cases from excision of the tumor followed by electrocoagulation. Lobectomy or pneumectomy are contraindicated by the proximity to the hilus. Surgical methods of treatment are indicated for tumors within the deeper layers. Hemorrhage associated with sudden cessation of respiration and death resulted in 2 cases from electrocoagulation. It is suggested that a sudden reflex—irritation of the vagus—may produce a shocklike cessation of respiration or it may result from a tetanic bronchial spasm and may at the same time produce an ectasia of the lung capillaries associated with effusion of blood into the interstitial tissues and into the alveoli.

Schweiz. Ztschr. f. Pathol. u. Bakteriol., Basel

8:(Nos. 3 and 4). Partial Index

*Leiomyoma of Prostate. P. Rohrbach.—p. 145.
*Pathologic Anatomy of Bronchial Adenoma. A. von Albertini.—p. 162.
Quantitative Studies on Typhus Rickettsias Pathogenic for Mice: Optimal Conditions for Preparation of Typhus Vaccine. O. Rostock.—p. 185.
Struma Nodule in Ovarian Dermoid in Woman with Goiter. P. Waser.—p. 200.
New Localization of Cystic Lymphopneumatosis: Lymphopneumatosis of Mediastinum. A. Fanchamps.—p. 208.
Hyperproteinemia and Hypoproteinemia, with Consideration of Problem of Plasma Cells. Cécile Schlienger.—p. 222.
Nonhemolytic Variants of Streptococcus Pyogenes. V. Wagner.—p. 238.
Rabies by Infection of Mucous Membrane. W. Piringer.—p. 245.

Leiomyoma of Prostate.—Rohrbach investigated the occurrence of fibromuscular proliferation in the prostate of 100 men, the majority of whom were over 40. Most of the specimens were necropsy material. Leiomyomas of the prostate are nearly as frequent as adenomyomatous nodules. They are found underneath the urethral mucosa from the colliculus seminalis to the urethral orifice and consist partly of spirally arranged muscle fibers and connective tissue septums with profuse vascularization. They seem to develop at about the same time as the glandular nodules. However, the myomas seem to remain small up to the age of 65 and only then do they begin to grow considerably. This contradicts the assumption of the elicitation of glandular hypertrophy of the prostate by estrogen but speaks for the promotion of the growth of leiomyomas by this substance at the higher ages.

Pathologic Anatomy of Bronchial Adenoma.—Von Albertini presents microscopic studies on 10 cases of bronchial adenomas, of which 3 were discovered at necropsy; 7 of the patients were under clinical treatment. Four of these 7 died, but in only 2 was necropsy performed. Necropsy material from 5 cases and biopsy material from 5 cases was obtained for pathologic studies. The microscopic character of the tumor justifies the term solid adenoma. There is no justification for terms like carcinoid and basal cell carcinoma. He assumes a close relationship between bronchial adenoma and bronchial carcinoma because, histogenically, both seem to be derived from bronchial epithelium. The adenoma may possibly represent a hamartoma from supernumerary bronchial buds.

Archivos de Pediatría del Uruguay, Montevideo

16:525-551 (Sept.) 1945. Partial Index

*Tuberculous Meningitis in Infant Vaccinated with BCG Vaccine: Case. R. Gorlero Bacigalupi.—p. 545.

Tuberculous Meningitis.—Gorlero Bacigalupi reports that an infant who had received BCG vaccine within the first three days after birth, and whose parents and family were normal, developed normally up to 22 months of age, when he developed acute tuberculous meningitis and died three days later. The diagnosis was confirmed by cultures of the cerebrospinal fluid and by inoculation of the cerebrospinal fluid into guinea pigs. There was a history of contact of the infant with a tuberculous neighbor when he was 8 months old.

Book Notices

Man Against Pain: The Epic of Anesthesia. By Howard Riley Raper. Cloth. Price, $3.50. Pp. 337, with illustrations. New York; Prentice-Hall, Inc., 1945.

Here is the exciting story of man's conquest of pain, written in a popular style. From the early crude attempts at narcotizing the surgical patient by drugs or by a blow on the head the reader is introduced to methods and men who "came close" to the discovery but failed to visualize the great possibility before them. The chapters dealing with the discovery of anesthesia and the controversy arising as to the priority and credit transcend mere popular interest and constitute a thorough study of the subject. As a result of his own researches into the subject and of critical analysis of the literature the author offers the following conclusions: Sir Humphry Davy suggested the use of nitrous oxide as a therapeutic agent to produce anesthesia in 1800 but did not act on his own suggestion or stimulate any one else to act by it. Henry Hill Hickman had the idea of anesthesia clearly in his mind and tried to anesthetize animals in 1823 but never found the right agent for his purpose, never carried his experiments to the human subject and was unable to stimulate others to do so. Robert Collier in 1839 mixed mesmerism and the fumes of alcohol and got as far toward anesthesia as it is possible to get with such a mixture. Charles T. Jackson may have anesthetized himself with ether in February 1842 but failed to do anything further about it until 1846, when he suggested to Morton that it might be substituted for nitrous oxide gas. Crawford W. Long used ether in March 1842 for the removal of a tumor but was too unimaginative to realize the possibilities in etherization, let four and a half years slip by without even trying to introduce it into general surgical practice, and played no part whatever in the events which gave anesthesia to mankind. E. R. Smilie started on the right track in the spring of 1844 with his mixture of opium and ether but mistook the action of the ether for that of opium and abandoned the idea. Horace Wells in December 1844 set in motion the train of events which brought the gift of inhalation anesthesia to mankind. He conceived the idea, tested it repeatedly, announced it, explained it and demonstrated it to many, including Morton. W. T. G. Morton, acting on information from Wells and a suggestion from the chemist Jackson, substituted ether for nitrous oxide gas and gave a demonstration in 1846 that served to announce anesthesia to the world.

The author is not surprised that Long, Morton and Wells have all been called discoverers. Long is the discoverer if one considers only the matter of priority. Morton is the discoverer if one considers only the question of who introduced anesthesia, and Wells is the discoverer in the sense that he found, recognized, demonstrated and acclaimed it and started it on its way to being introduced by Morton. Thus the author accords the palm of the true discoverer of anesthesia to Horace Wells. The author's conclusions are based partly on such facts as could be ascertained, partly on a skilful evaluation of the characters of the men involved and on a critical analysis of the existing literature on the subject of controversy. The author is not to be considered a Horace Wells partisan but rather a conscientious student of the history of the discovery of anesthesia.

DDT for Institutions: A Report on the Methods of Preparations and Use of DDT for Insect Control. Research Department, Hospital Bureau of Standards and Supplies, Inc. Paper. Price, 50 cents. Pp. 12. New York, 1945.

A twelve page mimeographed pamphlet has been prepared on DDT by the Research Department of the Hospital Bureau of Standards and Supplies. This pamphlet is bound and perforated for filing. The report has been checked by the Department of Agriculture for accuracy. Discussion is brief and concise and is pointed toward the practical application of insecticides containing DDT in hospitals. The information in this report will also be of value to superintendents of other types of institutions, homes and office buildings. Nonmember hospitals can purchase copies of the pamphlet. Preparation, effectiveness, usable forms, precautions, government control, history; summary and selected bibliography are the important divisions of the subject matter.

Black Widow: America's Most Poisonous Spider. By Raymond W. Thorp and Weldon D. Woodson, B.S., M.A. With a foreword by Emil Bogen, M.D. Cloth. Price, $3. Pp. 222, with illustrations by the authors. Chapel Hill, N. C.: University of North Carolina Press, 1945.

Most spiders are inoffensive and indeed useful creatures which contribute to the control of flies and other disease carrying insects and offer artistic and moral exemplars by their clever and indefatigable weaving. The particular species which forms the subject for this book, however, stands convicted by the evidence here marshaled against her as a vicious biter whose potent poison has brought suffering to thousands and death to hundreds of our fellow Americans.

The book opens with a review of the popular folk lore and literary references to spiders, an account of the "tarantula" and other reputedly dangerous spiders, leading to the conclusion that "the most universally distributed 'dangerous' spiders are those of the genus Latrodectus, and it is they, more than all others, which are responsible for serious cases of spider bite."

The black widow spider has been observed in each of the forty-eight states, and similar species are found in all of the six continents. During the past two centuries more than twelve hundred bites from this arachnid have been described by lay and medical observers. The striking clinical phenomena which result are detailed and amplified by the results of experimental bites on animals and man. Diagnosis is usually not difficult if the condition is considered, and effective symptomatic and specific treatments are available.

The sensational publicity given the black widow and her role in suicide, murder and other medicolegal matters is illustrated by the experiences of the authors. The appearance of the spider, her multiplication and life cycle, her diet and sites of predilection for her ungainly webs, and the artificial and natural factors in her control are clearly presented.

Extensive appendixes contain previously unpublished lay and medical case reports, chronological and geographic tables of the occurrence of spider bites, a large and representative bibliography and a detailed index. Despite the popular style of presentation, this book contains a wealth of authoritative information on the subject which should be of interest to all who may come in contact with this nefarious character.

The Psychoanalytic Study of the Child: An Annual. Anna Freud, Heinz Hartmann, M.D., and Ernst Kris, Ph.D., managing editors. Volume 1. Cloth. Price, $6. Pp. 423, with 3 illustrations. New York: International Universities Press, 1945.

This edition represents the first volume of a contemplated annual production under the same title. It is an Anglo-American venture and the managing editors are Anna Freud, Heinz Hartmann and Ernst Kris. The contents consist of assembled papers of British and American writers relative to numerous aspects of child psychology. This book, as well as future editions, is primarily intended as a guide to specialists in the field of child study, but other students in allied fields will find it of great value in understanding behavior problems in all ages. As stated on the cover, "The future of our society will depend on the capacity of our children to withstand the ever mounting tensions in the world of today and tomorrow. To guide the formative years of this generation is the critical task facing those who have assumed this responsibility. Adequately to do this requires both a genuine understanding of the mental and psychic development of the child, as gained through psychoanalysis, and the knowledge of how to translate these insights into practice." In this volume child therapy and child guidance are represented by extremely interesting and comprehensive case presentations. Many of the contributors are well known for their progressive insight into emotional problems of children, and the subjects chosen for publication are well selected.

The book contains five chapters, on genetic problems, problems of child analysis and child development, guidance work, problems of education and surveys and comments. Unfortunately an index is not included, and many of the papers have bibliographies following the text which are not alphabetically arranged and are therefore somewhat confusing to the reader who wishes to investigate the references given. However, this book helps to fill a real need, and these are merely format criticisms which may be easily corrected in future editions.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

VITAMINS DURING PREGNANCY

To the Editor:—**What are the recommended dosages (not the minimum daily requirements) for the vitamins and minerals during the third trimester of pregnancy? What are the greatest amounts of each vitamin and mineral that could be taken during this period without causing any danger to the mother or to the fetus?** **M.D., New York.**

ANSWER.—The Food and Nutrition Board of the National Research Council has established Recommended Dietary Allowances for the principal nutritional essentials. These are given for various age groups, states of physical activity, pregnancy and lactation. During pregnancy the recommendations apply to the latter half. The quantities recommended are 6,000 units of vitamin A, 1.8 mg. of thiamine, 2.5 mg. of riboflavin, 18 mg. of niacin, 100 mg. of ascorbic acid, 400 to 800 units of vitamin D, 15 mg. of iron, 1.5 Gm. of calcium from food sources and the same for phosphorus (greater quantities if from pure chemical compounds) and 85 Gm. of protein. The recommended amounts of the lesser minerals are not stated quantitatively, but 0.2 to 0.3 mg. of iodine daily is important. This can be secured from the regular use of iodized salt. A good diet normally will supply sufficient copper. Vitamin K is often given to the mother toward the end of pregnancy in amounts of 1 to 2 mg. daily.

At the present time knowledge of danger from use of vitamins in excessive amounts under practical circumstances is limited to vitamin D. The dosage of this vitamin should not greatly exceed 400 to 800 units daily, since larger quantities reduce the efficiency in promoting calcium absorption and much higher levels may withdraw calcium from the bones. Iodine in excessive amounts may cause skin reactions, and it is advised that the 2 mg. dosage of vitamin K be not continued for a period exceeding four weeks.

HUMAN TUBERCULOSIS IN LEMURS

To the Editor:—**I would appreciate knowing whether lemurs are susceptible to human tuberculosis.** **A. F. Liber, M.D., Amsterdam, N. Y.**

ANSWER.—Herbert Fox examined at necropsy 86 lemurs and lemuridae. Twenty-three of these showed tuberculosis, an incidence of about 25 per cent. Tuberculosis of both respiratory and alimentary origin were found, but the latter was more frequent. The disease, nodular caseous or confluent caseous in type, was found in the lungs, liver, spleen and lymph nodes. The intestine, kidney and serous membranes were less often affected. No fibrotic lesions were encountered. Cobbett cultured human type tubercle bacilli from two ringtailed lemurs that had acquired the disease spontaneously. He also readily infected lemurs with bovine type tubercle bacilli experimentally. The lemur shares with primates an equal and definite susceptibility to both the human and the bovine type of tubercle bacillus.

References:

Fox, Herbert: Disease in Captive Wild Mammals and Birds, Philadelphia, J. B. Lippincott Company, 1923.
Cobbett, Louis: The Causes of Tuberculosis, London, Cambridge University Press, 1917.

MONILIA ALBICANS INFECTIONS

To the Editor:—**Is there any effective treatment of infection with Monilia albicans involving the mouth, throat and chest?** **J. R. Crowder, M.D., Sullivan, Ind.**

ANSWER.—Infections with Monilia albicans are seldom primary in nature but usually occur because the resistance of tissues is diminished by other factors such as vitamin deficiencies, infections or general debility. Treatment, therefore, should be first directed to correcting the underlying cause or causes. Specific treatment is unsatisfactory. Potassium iodide is usually advocated especially when the bronchi and lungs are involved, but there is little or no evidence of its specific value. For infections involving the oral mucous membrane mild alkaline mouth washes or solution of gentian violet (1: 10,000) have been used, but again without evidence of specific effect. The same may be said for vaccine prepared with Monilia.

TRICYCLE RIDING FOR FLAT FEET

To the Editor:—**In the treatment of flat feet in children, would riding a tricycle with pedals shaped so that the child would have to toe in be helpful? Is there any such pedal on the market?** **P. J. Imperato, M.D., Brooklyn.**

ANSWER.—There is no special pedal for the correction of flat feet. However, riding a tricycle is good exercise for children and does strengthen the foot. The most important exercise for correction of the foot is correct walking. To hold the foot in the normal position the inner side of the heel should be raised about ⅛ inch and a comma bar which is about ¼ inch higher on the outside should be placed under the anterior part of the foot.

Reference:

Hauser, Emil D. W.: Diseases of the Foot, Philadelphia, W. B Saunders Company, 1939.

IMPOTENCE FOLLOWING ENCEPHALITIS

To the Editor:—**How long must treatment with testosterone propionate in a case of impotence following encephalitis be kept up before seeing results? is 50 mg. three times a week the proper dose?** **M.D., Michigan.**

ANSWER.—It is questionable whether the administration of testosterone propionate for impotence which follows encephalitis will be beneficial unless there is an atrophy of the testes. Twenty-five mg. of this material three times a week is a large enough dose to give. If any results are to be obtained they should be noticed after six weeks of therapy.

SPONTANEOUS SUBARACHNOID HEMORRHAGE

To the Editor:—**An unmarried woman aged 43, a clerk in a store, was apparently well until three months ago, at which time she consulted her local physician. The family did not know what diagnosis was made, but the patient was appurently able to continue her work. Four days prior to admission to the hospital she arose in the middle of the night, started to cross the room and collapsed. She was found lying on the floor and was placed in bed. Her chief complaints at this time were severe headache and slight weakness of the left side. Following a convulsion she was admitted to the hospital. Temperature on admission was 99 F., pulse rate 62 and respiratory rate 16. A spinal puncture was performed immediately; the spinal fluid was grossly bloody but did not seem to be under increased pressure. However, 30 cc. of the spinal fluid was withdrawn, resulting in some diminution of the headache. Throughout the period of hospitalization considerable sedation in the form of codeine tablets hypodermically were required because of the severe headache. Blood pressure was 134/76. There was no nuchal rigidity at any time. The following day a divergent squint was noted. The eyegrounds showed no papilloedema or arterial beading. On the third day the spinal puncture was repeated. The fluid was practically unchanged in gross appearance (still bloody); the initial pressure was 170, with a rapid rise and fall in response to jugular pressure. An additional 30 cc. of fluid was withdrawn. From the second day to the time of death the temperature was almost consistently 101 F., the pulse rate 60 to 80 and the respiratory rate 14 to 18. Urine specimens were normal. Hemoglobin was 85 per cent, red blood cells 4,460,000, white blood cells 20,300, polymorphonuclear leukocytes 93 per cent. Hinton and Kolmer serologic tests (two) of the blood were normal, but of both spinal fluid specimens were 4 plus. There was no apparent increase in the white blood cells in the spinal fluid. The headache persisted and several convulsions occurred during the ten days in the hospital. Death occurred shortly after a convulsion during which the systolic blood pressure was 156. There is no definite history of hypertension or syphilis.** **M.D., West Virginia.**

ANSWER.—The picture described is one of spontaneous subarachnoid hemorrhage due to a rupture of an aneurysm at the base of the brain. These aneurysms are not syphilitic and are usually due to a congenital weakness of the wall of the blood vessel. The site of rupture is frequently one of the vessels of the circle of Willis, either anterior or posterior communicating arteries. The divergent squint would indicate that the original rupture occurred at the site of the oculomotor nerve. In many instances hypertension is associated with the rupture of the aneurysm. In no instance should morphine or its derivatives be given in a case of this kind because the drug masks or produces symptoms like medullary compression. The ideal treatment is 50 per cent glucose intravenously or repeated daily spinal punctures.

DIET SHEETS

To the Editor:—**Could you kindly tell me if there is any company from which I could purchase or obtain satisfactory diet sheets for various disease conditions?** **Jacob Levine, M.D., Bronx 58, N. Y.**

ANSWER.—Diet sheets may be secured from a number of food manufacturing concerns. The completeness or quality of the lists must be judged by the physician. Some of the better known companies having special diet lists available are Chris

Hansen's Laboratory (Junket), Little Falls, N. Y.; the Dietene Company, Minneapolis; Kellogg Company, Battle Creek, Mich.; Ralston-Purina Company, St. Louis (allergy diets); Eli Lilly, Indianapolis (diabetic diets). The Metropolitan Life and John Hancock Insurance Companies have reducing diet lists. The American Institute of Baking, Chicago, has some special diet materials.

The Personal Diet Service, 145 West Forty-Fifth Street, New York 19, maintains a high class special diet service supplying prepared sheets. The American Dietetic Association of Chicago will soon have available a new Diet Therapy Handbook which will contain much pertinent information but no prepared sheets, of course.

HARELIP IN TWINS

To the Editor:—A woman aged 31 gave birth to twins. The first boy had a harelip on the right side and weighed 7 pounds 2 ounces (3,230 Gm.). The second boy had a harelip on the left side and weighed 5 pounds (2,268 Gm.). Is this what would be expected in a birth of this kind? These boys had separate amniotic sacs with one placenta.

Bert Anderson, M.D., Victoria, Kan.

ANSWER.—The question is whether or not one would expect both members of a pair of twins to have harelip if one of the pair does. Several issues are involved. First, is there any evidence of a hereditary basis for harelip? Harelip occurs sporadically in some families without any evidence of a familial tendency. Yet enough pedigrees exist which strongly suggest that hereditary factors do play a role in a majority of instances. Several pedigrees show 6 or 7 cases of harelip in two or three generations. This is a much higher incidence than would be expected if environmental factors alone were responsible. Furthermore, occurrences among twins also suggest that genetic factors frequently play a role.

Whether or not both members of a pair of twins would be expected to show harelip if one does depends to some extent on the type of the twin set that is involved. If the twin set is of the fraternal type the probability for either member of the set is the same as for any child born singly to that family. If the twins are of the one egg type the probability is great that the second member will show the abnormality if the first one does. Not enough twins with harelip have been properly diagnosed for zygosity to give exact information, but indications are that even among one egg twins one member may be free from harelip while the other one shows the defect.

The mirror imaging reported for the twins in question introduces an unsettled problem. One egg twins do tend to show mirror imaging to a greater degree than do two egg twins. Therefore, since the twins in question are of the one egg type, it is not surprising to find one member with a harelip on the left side and the other with the defect on the right.

There are questions relative to differences in incidence among sexes, mode of inheritance of harelip and the like which are of interest, but a discussion of such questions would go too far afield.

It is important to have all cases of harelip and similar defects reported in the literature. This is true especially if the defect occurs among twins or reappears in several generations of a family.

FRIGIDITY AND THE CLITORIS

To the Editor:—What is the general opinion among gynecologists as to the value of operations on the clitoris for frigidity or reduced libido? If there is an operation done for this condition what is it?

Frank E. Hyde, M.D., Beaufort, N. C.

ANSWER.—Operations on the clitoris or elsewhere have practically no effect on frigidity or reduced libido. The subject of frigidity has interested gynecologists, psychiatrists and psychoanalysts, who agree that in all cases of frigidity there is a large psychic element. Likewise all physicians believe that reactions of envy of men and fear of damage to the genitals play at least some part in the psychology of every girl. In many cases these are the dominating factors in personality development.

The proportion of women who derive little or no pleasure from sexual intercourse is high and has been variously estimated to be from 35 to 75 per cent. Some women not only experience no pleasure but actually suffer pain and revulsion. Greenhill (Office Gynecology, ed. 4, Year Book Publishers, 1945, p. 110) says "I should like to emphasize a point about which almost nothing has appeared in gynecologic literature. This is that in women there are actually two sexual organs. The first is the clitoris, which plays the dominant role in childhood and in masturbation during adulthood. The second organ is the vagina, which psychologically is unimportant until puberty. Whereas in the child the clitoris can and does give sexual satisfaction, in the normal adult woman it is the vagina which is the principal sexual organ. In frigid women, however, the transfer of sexual excitement and satisfaction from the clitoris to the vagina does not take place. Hence such women possess the infantile erotic zone and not the adult one."

Edmund Bergler (*Psychiat. Quart.* **18**:374 [July] 1944) maintains that a typically frigid woman suffers not from a deficiency of the libido but from a neurosis; that is, an illness of the unconscious. For this reason endocrine therapy is unsuccessful in typical cases.

Knight says "True frigidity (due to emotional factors) requires psychologic investigation following gynecologic checkup, to determine the degree of disturbance and the dynamic psychologic factors operating in the individual case. The gynecologist may attempt reeducation and reassurance, and, if these measures are ineffective, psychotherapy by a psychiatrist or psychoanalyst (preferably a man) should be recommended. Many cases of frigidity carry a good prognosis with appropriate psychotherapy. Some cases, however, are too deeply rooted in neuroses or character disorders, or desire for correction is too slight, for treatment to be effective."

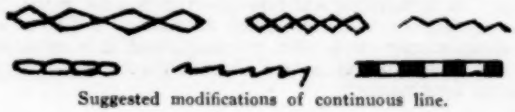
In view of the extent of the psychic factor in frigidity, operations on the clitoris are not justified.

VISUAL FATIGUE IN AUTOMOBILE DRIVER

To the Editor:—Long distance highway driving appears to tire the eyes of many drivers, and the fatigue is complained of more rapidly when the car has to follow a straight black line. This straight line leads the eye on and on, with no rest period. Has any modification of this line been tried? I should like to suggest that breaking the continuity might be helpful. Perhaps something like one of the accompanying sketches, although it would probably be more expensive than the one in use now.

Amy Weiss, M.D., Chicago.

ANSWER.—As far as is known, the suggestion made in the query has never been tried, but it is questionable whether following the line is a factor of any import as there are so many aspects to the problem. In all likelihood the muscle balance of



Suggested modifications of continuous line.

the individual driver plays a greater role than do the majority of the extraneous factors. It would be of great interest to examine the ocular apparatus of drivers that complain of such fatigue in contrast to others who do not have that complaint.

DIAGNOSIS OF UNDULANT FEVER

To the Editor.—In Queries and Minor Notes in The Journal, Jan. 5, 1946 there is a question on the diagnosis of undulant fever. The detailed reply is unusually adequate and factual with two exceptions:

The statement that the "opsonocytophagic tests give about 3 per cent of falsely negative reactions in either the acute or chronic forms" is confusing, since it is not possible to have a "negative" opsonocytophagic test. This test is purely a relative one indicating nothing more or less than the phagocytic activity of the patient's polymorphonuclear cells at the time the test is made. A reading showing definite phagocytosis in 0 cells, moderate phagocytosis in 0 cells, slight phagocytosis in 0 cells and no phagocytosis in 25 cells too often is referred to as negative but indicates only a lack of measurable resistance to Brucella infection. Conversely a high reading, such as 19-6-0-0, cannot be called a positive test but rather one indicating a high degree of resistance. The use of the term positive or negative is particularly misleading, since the low reading (so-called negative) is usually obtained in the presence of actual infection, indicating a lack of resistance to the existing infection. If the intradermal reaction is positive and the phagocytic index is low (anything from a so-called negative to a moderate degree of resistance, such as 5-7-8-5), and if the patient exhibits symptoms presumably referable to brucellosis, a tentative diagnosis is justifiable even in the presence of negative cultures and negative blood agglutination reactions.

The other point which should be brought into question is the statement that "brucellergin intradermal tests give about 10 per cent falsely negative reactions during the initial febrile stages and are slightly more reliable in chronic illnesses." It seems a mistake to describe the intradermal test under the term "brucellergin intradermal test," since brucellergin cannot be said to be a fully acceptable skin testing antigen. Angle, Algie, Baumgartner and Lunsford tested a group of 160 inmates of a county farm, using brucellergin intradermally in one arm and heat killed vaccine in the other arm simultaneously. Positive reactions occurred in 44 brucellergin tests (27 per cent) and in 89 heat killed vaccine tests (54 per cent). The two skin testing materials were used in the same patients at the same time. The occurrence of twice the number of positive reactions to heat killed vaccine as to brucellergin would seem to indicate that heat killed vaccine is more sensitive than brucellergin as a skin testing antigen (Harris, H. J.: Brucellosis [Undulant Fever], Clinical and Subclinical, New York, Paul B. Hoeber, Inc., 1941, p. 154).

Harold J. Harris, New York.